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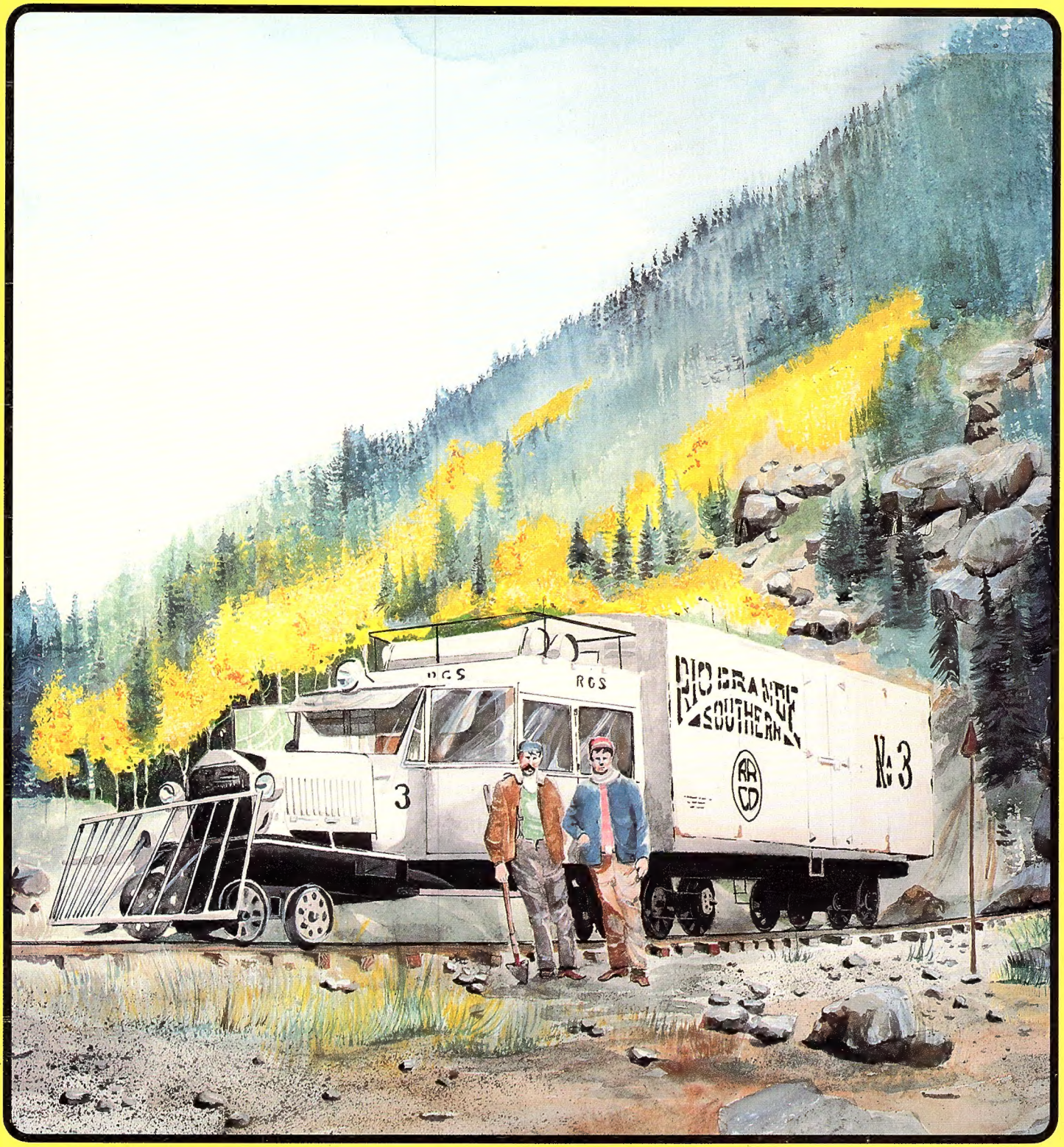

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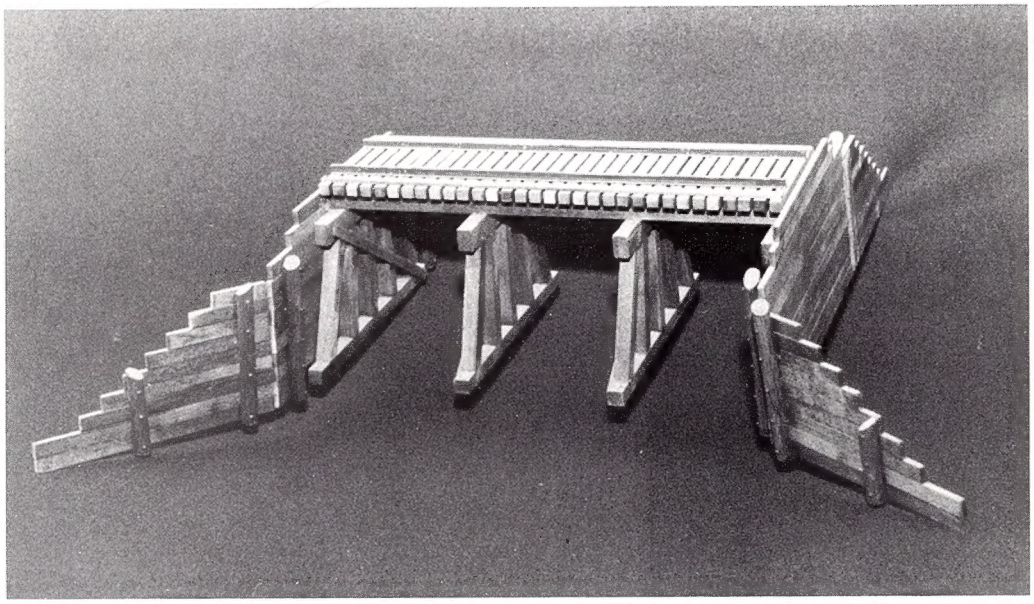

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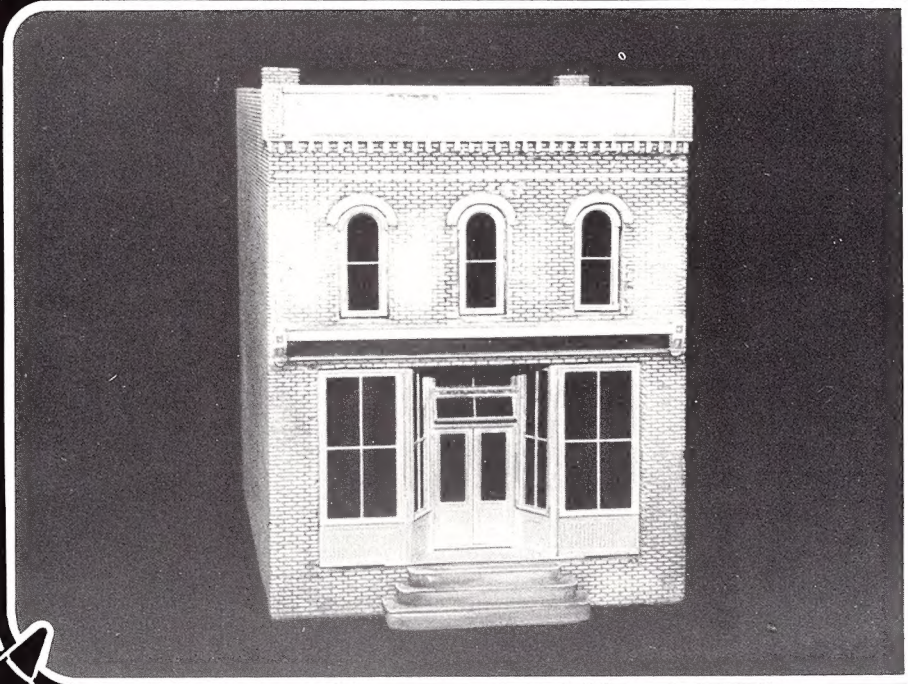

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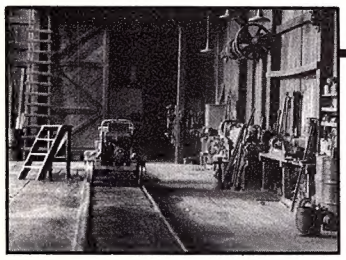

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COVER

The brightness of the Colorado aspens contrasts with the run-down look of Rio Grande Southern Goose #3. This month's cover was painted by Malcolm Furlow, and shows that he is not only a fine model builder but a fine artist.

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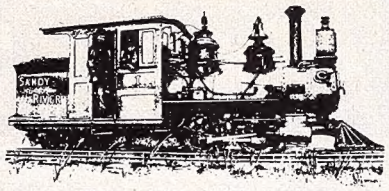

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IT'S NEW

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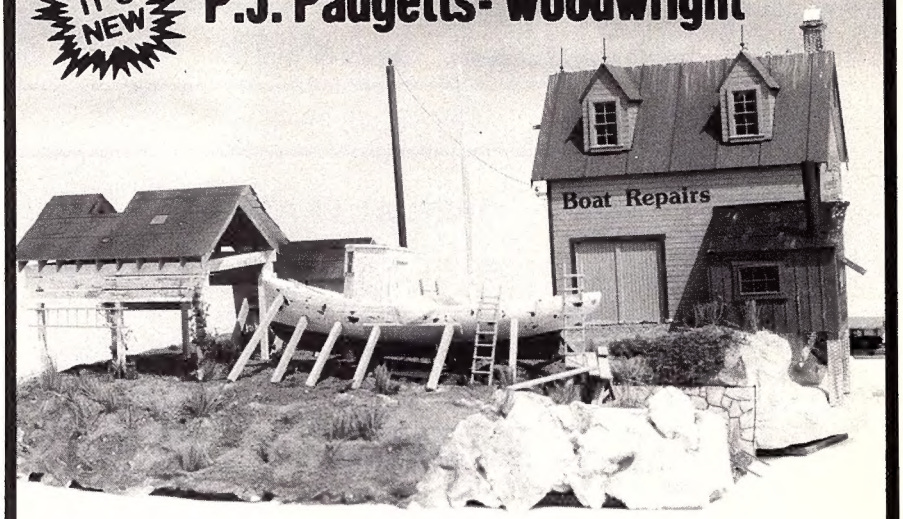

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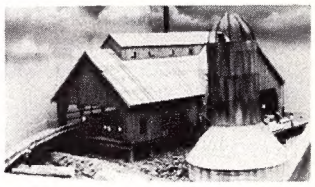

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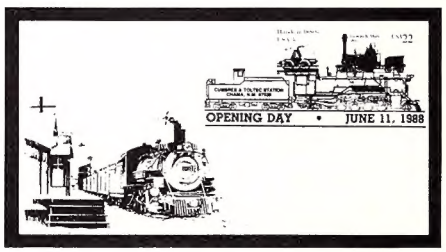

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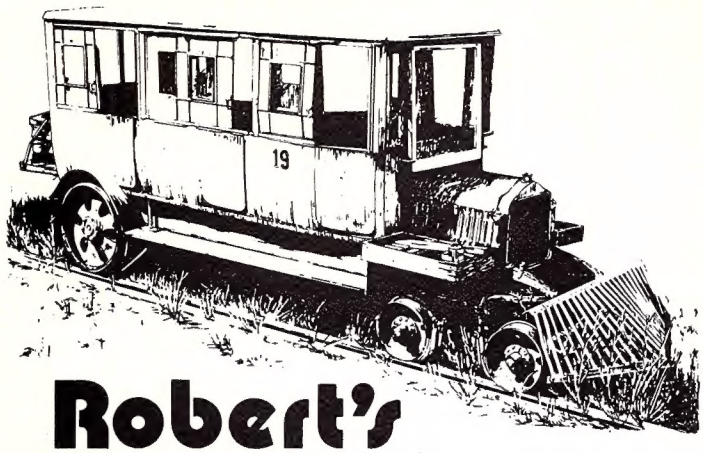


Robert's Ramblings....

Charlie and Margaret

On April 10th of this year **GAZETTE** *columnist, Charlie Getz, had the good sense to marry Margaret Leung. The happy couple left for a two-week honeymoon in England immediately following the reception, which was held in the old Berkeley, California, Southern Pacific Station – now the China Station restaurant. Our best wishes go to Charlie and Margaret.*

Overfair Pacific #1913 in service at the 1915 Panama Pacific International Exposition in San Francisco, California. I found this photo after diligent searching through hundreds of postcards at an antique show. *Photo, collection of Bob Brown.*

I am not giving up on my Tuolumne Forks layout, but here in the northern hemisphere, it's spring – the season for *garden railways* – time to get out there, smell the posies, and practice my "narrow gauge weight loss program." Even if you haven't started a garden railway yet, you can get out there and get some fresh air and dream a little. So you don't have a garden? Dream a little anyway, it can't hurt.

While Irene and I were on a Christmas visit to England, I saw a garden line built by Dave Pinniger that was so simply built that I had to ask Dave to share it with us. (See "The Ambledown Valley" on page 65.) My own line is built up on redwood stakes and represents quite a bit of time, expense, and hard work. Dave built his line on a limited budget with a method that is simple, inexpensive, and quick. Moreover, it is holding up to the wet and misty climate of England. Turn to page 65, try his methods, and see if you can get the trains running in your garden this summer.

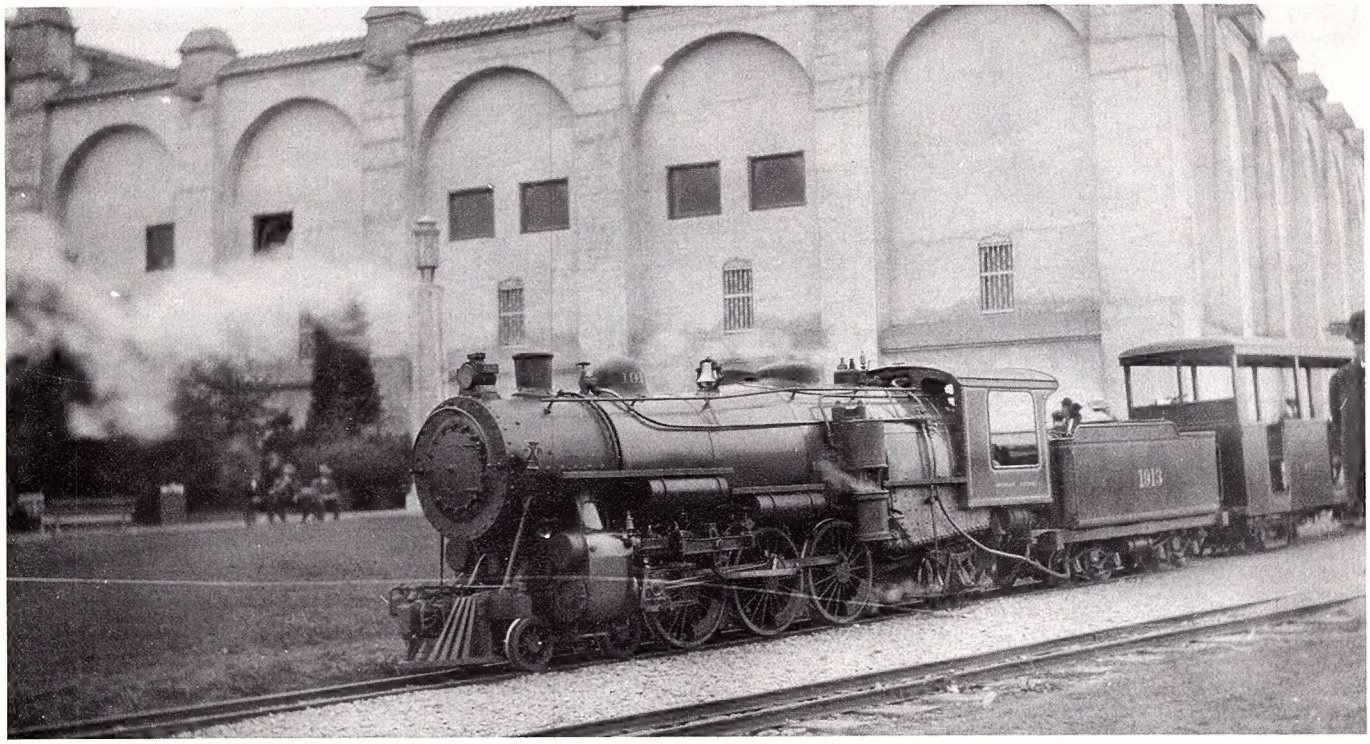
The English and Welsh narrow gauge lines are very small, and, dare I say, quaint? Compared to most of our narrow gauge railroads they are really tiny. Occasionally a windstorm blows a prototype English narrow gauge train right off its track. One of the highlights of my visit to Dave's layout was a gust of wind which, to Dave's delight, blew one of his trains off the track–such unplanned natural events are one of the joys of railroading in the garden.

In my March/April "Ramblings" I mentioned some 1½-inch scale, 15-inch gauge models I had recently built. I enjoyed reading Shaw's *Little Railways of the World* (Howell-North, Berkeley, 1958) – and I would be interested in titles of other books and articles on the subject of these super narrow gauge prototypes. I am particularly interested in anything on the 19-inch gauge Overfair Railway that ran at the 1915 Panama Pacific International Exhibition in San Francisco and the 18-inch gauge Venice Miniature Railway that ran in Venice, California. I would appreciate photos, plans, or information on these lines.

Note: Al Armitage's column, "The Model Makers Notebook" is not in this issue. Al will be back again in the July issue.

Incidentally, we misspelled the name of the builders of Falk #1 in the January/February issue – it should have been Marshutz & Cantrell.

Bob Brown



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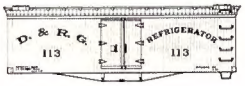

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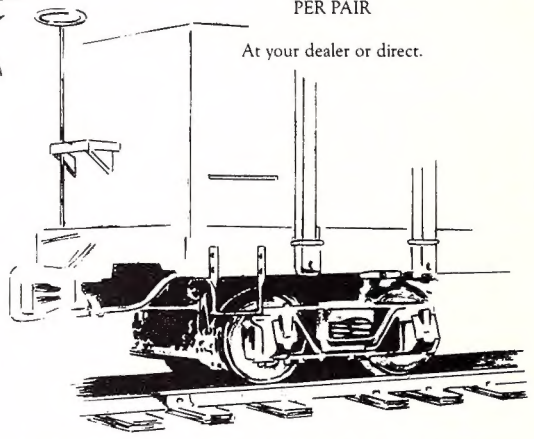

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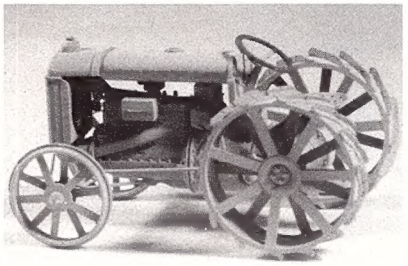

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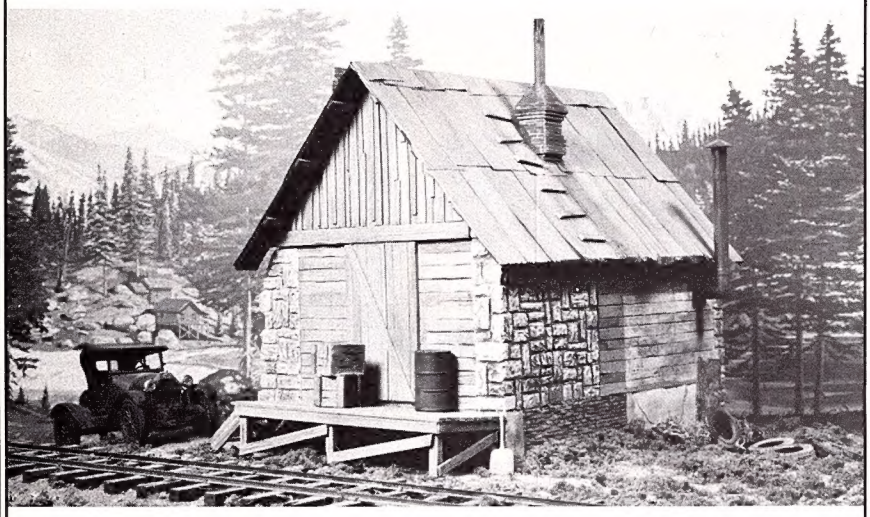

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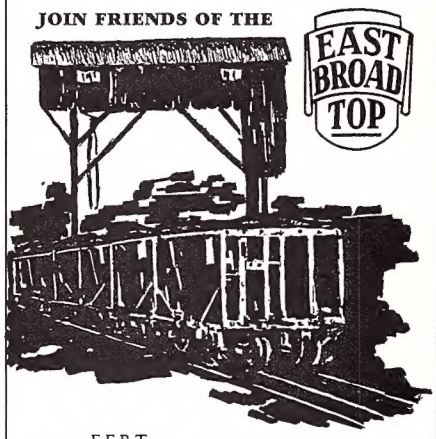

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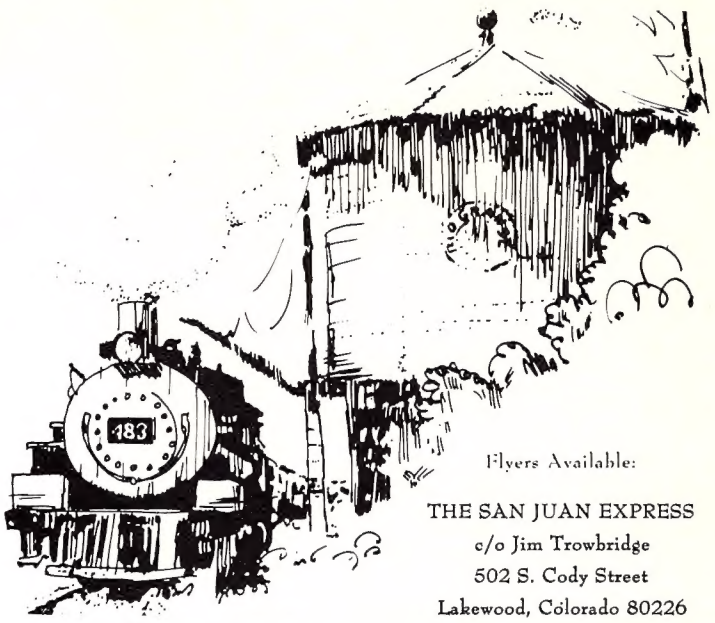

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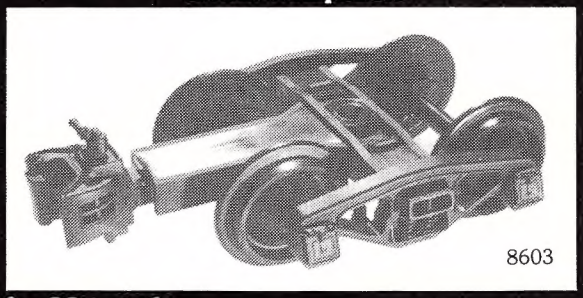

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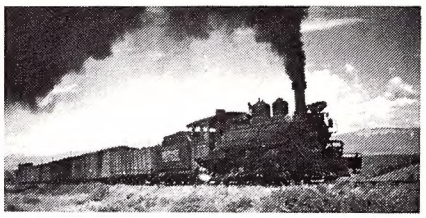

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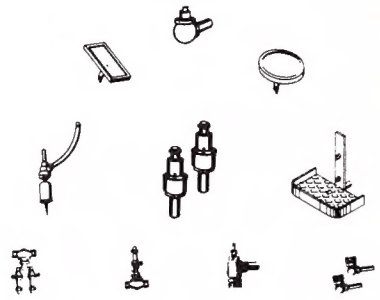

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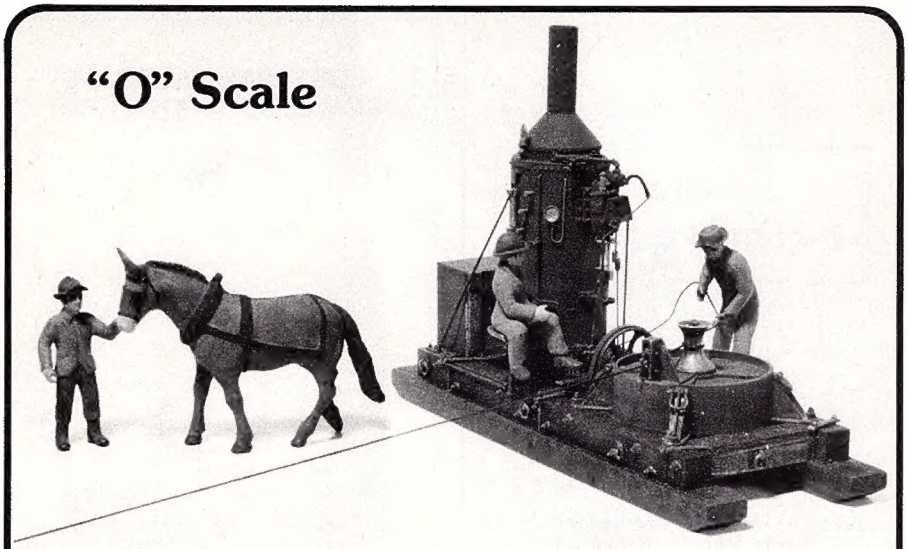

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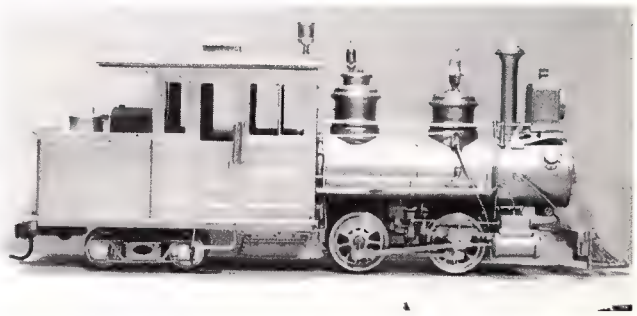
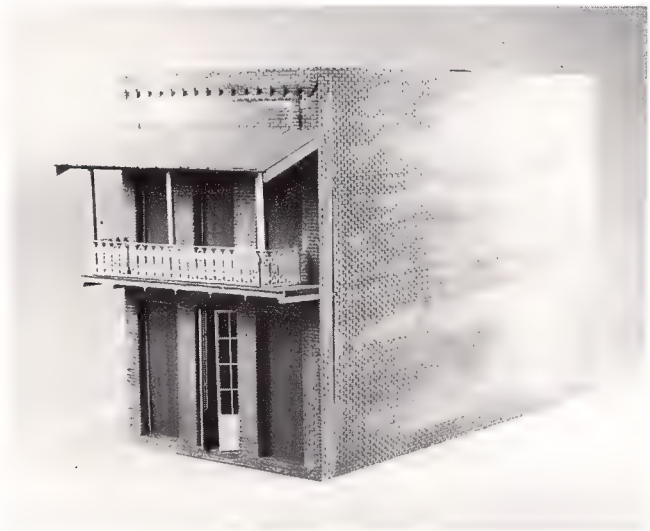
NEW in REVIEW

Scale Structures Ltd., 12696 W. 108th Terrace, Overland Park, KS 66210. The SS Ltd. line has been purchased for the most part (all but the Case Tractor and some of the vehicles) by Finestkind Models who also now own the Triangle Scale Models line. So far the new SS Ltd. management has brought out the HO scale Bagby water tank, the San Francisco Building, and the Virginia & Truckee jib crane. They have re-issued the excellent line of SS Ltd. posters, two sheets for $2.00, the oil well walking-beam pump for $12.95, the water column for $10.95, the pillar crane for $12.95 and assorted signs for $1.00 under the Triangle name. In order to keep up with everything at SS Ltd. write for their catalog of parts. I was amazed at what is available. *Bob Brown.*

The Sandy River Car Shops, P.O. Box 573, So. Dartmouth, MA 02748 has a limited run of 25 On2 brass Forneys for sale. Half the run has been sold, so don't wait. The prototype is Franklin & Megantic #1 and this brass model was produced in the U.S.A. These "cute" little engines sell for $425.00 and will not last long. *Bob Brown.*





Trains of Texas, 1060 Sagewind, Houston, TX 77089 has four new O scale items ready. The first is an abandoned coke oven with its roof fallen in. These ovens could also be used in S scale and sell for $29.95 a pair. The second and third of the four new items from Trains of Texas are two Hydrocal building fronts – one for a rooming house, the other for a shoe repair and sales building. Both of these buildings were featured in Harry Brunk's "Up Clear Creek on the Narrow Gauge" in the November/December 1980 **GAZETTE**. These fronts come with windows and doors and sell for $14.95 and $19.95 respectively. The fourth item is a kit for the Wells Fargo building in Columbia, California. This large building includes four Hydrocal wall castings and Grandt Line doors, windows, and fancy railings, as well as wood for the upper story porch. The windows are cast in place because all the windows of the prototype had iron shutters to contain fires. I have assembled my Wells Fargo building and am very pleased with it. The kit sells for $89.95. *Bob Brown.*

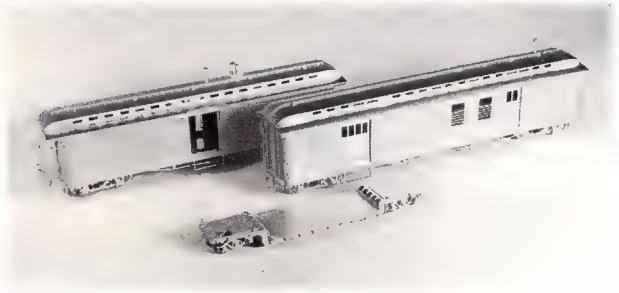
Keith Blanchard Productions, 4064 W. Los Altos Ave., Fresno, CA 93722 has a set of three 20- x 30-inch color photo posters available. The first of their "489 Freight Series," these posters show ex-Denver & Rio Grande Western #489 crossing the Cascade Trestle, coming out of the Toltec Tunnel, and rounding Phantom Curve, all on the Cumbres & Toltec Scenic Railroad. The prints are done by Kodak and sell for $29.00 each or $80.00 the set. *Bob Brown.*

Silverton Specialties Co., 2701 North Seventh Ave., Phoenix, AZ 85007 has the third in their series of four D&RG belt buckles ready. The design, by Jan Rons, shows a train crossing the Mill Trestle on the Ouray branch. There will be only 750 of these buckles made. They are available in solid bronze for $22.00 or solid sterling silver for $120.00. The buckle commemorates the 100th anniversary of the Ouray branch. *Bob Brown.*

Rara-Avis Train Division, 5702-D, Marsh Rd., Pacheco, CA 94553 has several new items for sale. First is a four-wheeled G scale flatcar kit which consists of pre-cut wood, white metal pedestals, plastic nut/bolt/washer castings, stake pockets, and brake wheel. The kit sells for $17.95. I started to build this car but I did not finish it because I plan to use the underframe for a 1½-inch, 15-inch gauge dump car. For $2.50 more you can get a kit for a set of wooden bulkheads. Another $2.50 will buy a gondola conversion. The wheels are made by Grandt Line and are Delrin with brass axles and have ribbed backs. They sell for $2.50 for a set of four and have a finer flange than most G scale wheels but are still compatible with LGB track. The pedestals were cast by Trackside Details and are also available separately for $5.00 for a set of four. Rara Avis also has some enormous plaster tunnel portals. These castings represent stone or wood portals and sell for $19.95 each. Retaining walls are available for $17.95. They have a track bumper for $4.50. Those of you who live in or have occasion to visit the San Francisco Bay Area should stop in at the Rara Avis retail store. It's full of goodies. *Bob Brown.*

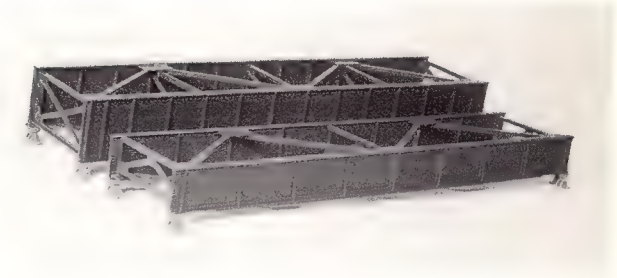
North American Cartographics Division of Geological Exploration Company, P.O. Box 268, Idaho Springs, CO 80452 has a new map of **GAZETTE** author Harry Brunk's Clear Creek area of Colorado. The map is drawn to 1:48000 scale and shows the area from Golden up to Silver Plume and beyond. The map represents the Colorado Central from 1869 to 1898 and the Colorado & Southern from 1898 to 1931. All the mills, towns, mountain peaks, and railroads are shown. The maps come folded in two sizes: 18" x 48" plain ($16.50), hand-colored ($21.50), and 36" x 96" plain ($25.00), hand-colored ($41.50). Or you can get either size sent rolled in a tube for an extra $1.50 per map. *Bob Brown.*

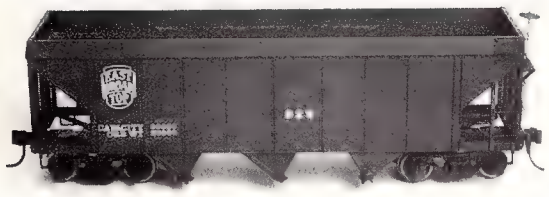
Precision Scale Company, 1120-A Gum Ave., Woodland, CA 95695 has three new brass imports ready. The first is an HOn3 White Pass & Yukon depressed-center flatcar. This is a very heavy, modern car and would be an unusual type of car to run on your railroad. The model comes with trucks and is well done. It sells for $79.95. PSC also has two new Sn3 passenger cars available. These are beautiful little cars and ride smoothly on fully sprung brass trucks. The doors work and each model is heavy and well made. The first is of a D&RGW 44-foot open-platform baggage car and sells for $119.75. The second represents one of the 48-foot postal baggage cars used on the Rio Grande. It sells for $122.50. *Bob Brown.*



Triangle Scale Models, P.O. Box 25052, Overland Park, KS 66210 has an Sn3 CONOCO tankcar kit ready. This car is made from pre-cut strip wood, a urethane tank, white metal details and trucks, plastic wheels with metal rims, plastic details, and comes with decals, Kadee couplers, and four sheets of instructions and drawings. The kit sells for $32.50. *Bob Brown.*

Micro Engineering, 1120 Eagle Rd., Fenton, MO 63026 has two new S scale deck girder bridges: one for standard gauge, the other for narrow gauge. Each bridge is 36 scale feet long and is made from easy to assemble styrene-injected castings. There are some 3200 rivets on the standard gauge bridge. The kits sell for $9.95 each. A price list of their many products is available from ME for $1.00. *Bob Brown.*

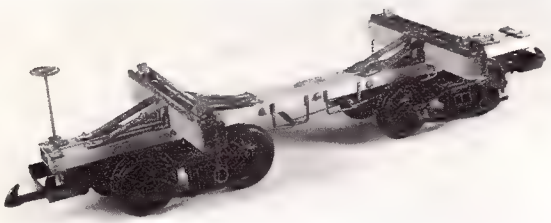




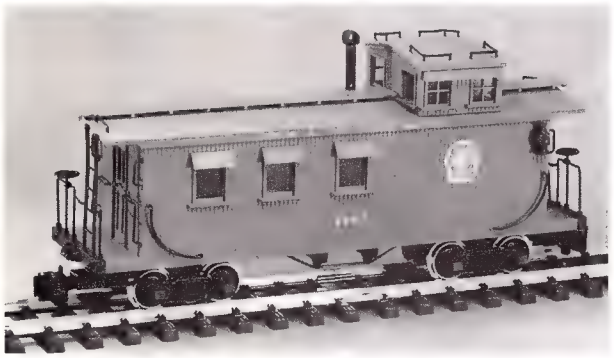
C&BT Car Shops, 8162 Roosevelt Ave., Pittsburgh, PA 15327 has their new On3 East Broad Top steel hopper kit ready. This model sells for $25.00 complete with trucks and includes a one-piece hopper body onto which you add included details such as the center sill, hand grabs, and brake detail. The body castings is huge and has nice crisp detail and rivets. The parts of my sample fit together easily. The trucks are included but they come as a kit and the wheels have to be assembled onto the axles. The wheels are injection moldings with metal rims. The kit comes with full instructions, cast boards to extend the sides, and a complete set of decals so you can letter your car to represent any hopper car on the EBT. You can buy a set of two loads for $3.99 extra. One load is the ganister rock that the EBT hauled; the other is coal. You can also get two metal weights to fit in the hopper bays for $2.99. *Bob Brown.*

Carr's Modeling Products, Unit 5, Centre 88, Elm Grove, Wembledon, London, SW19 4HE, England has a great variety of soldering products. They have solder stripper for cleaning soldered joints, solder paste, metal surface conditioner, several fluxes, and low-temperature solder. This material looks interesting so write to them for prices. *Bob Brown.*

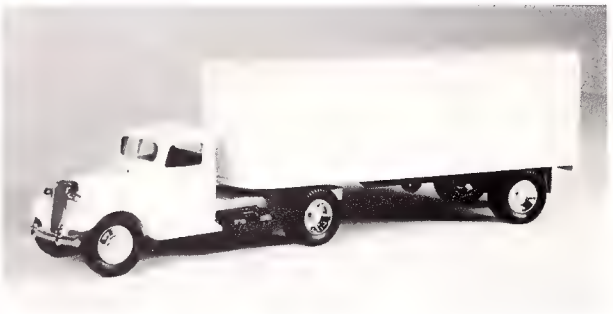
American Model Builders, 1408 Hanley Industrial Court, St. Louis, MO 63144. I am still trying to assemble all of the new AMB kits. The latest one I have completed is for their new G gauge skeleton log car. This was a "really fun kit" to work on. The kit sells for $29.95 and consists of two wooden body sills, two wooden bunks, and all the Cerro Bend hardware necessary to build the car. There are no trucks or couplers. I dipped my wood in some black leather dye, and my castings in Blacken-It, and glued the car together with ACC. It went together easily and that ½-inch scale detail really jumps out at you. *Bob Brown.*



Delton Locomotive Works, 120 Maple, P.O. Box 408, Delton, MI 49046 has a new, red, G gauge Denver & Rio Grande Western caboose ready. This model is highly detailed and comes ready to run with working lights and a choice of working, automatic knuckle type couplers or LGB type loop couplers. This is only one of many new G gauge models being produced by Delton, so write to them for their list, or see your dealer. *Bob Brown.*



Thomas A. Yorke, Ent., P.O. Box 1330, Fontana, CA 92335 has their new O scale Back Roads Grocery available. I really had fun assembling this kit. The model includes five plaster wall castings. (The front is in two pieces.) Yorke gives you full coloring information and his techniques really work. The roof materials are included and the roof was the hardest part to make but the most fun. It is made up of individual shingles, sheet tin and corrugated material. There are masses of signs to cover your building and materials are provided for you to build-up the falling-down, front porch. The kit comes with full instructions and full sized plans. Plastic doors, windows, and the smoke stack are included. The kit sells for $44.95. Keep 'em coming, Tom. Tom also has a 1937 Ford semi tractor/trailer "Big Rig" by Ertl for $13.95 and $2.50. This model has an easy-to-fill-in coin slot in the roof, but is an excellent model otherwise. *Bob Brown.*



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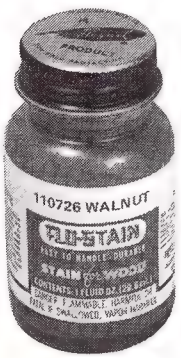

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In Brief...

Maxitrak Miniature Railways, Rothiemay, Offham Rd., West Malling, Kent ME19 6RG, England has a line of relatively inexpensive narrow gauge kits in 5-inch gauge for sale. They have four live-steam engines, a gasoline-powered engine and two electrically-powered "internal combustion" engines available. The prices for fully-machined steam engine kits range from 1335 pounds (approx. $2500) to 2972 pounds (approx. $5600) – the electrically-powered engine kits are 599 pounds (approx. $1000). They also have a complete range of cars and track. Write to them for details and a well-illustrated catalog...

Arkansas Valley Scale Models, 2105 Wolfe Lane, Fort Smith AR 72901 has taken the trouble out of converting HO gauge Kato Diesel mechanisms to On3. For $2.00 and a SSAE you can get four urethane spacers to re-space the side frames on your Kato mechanism...

Master Creations, P.O. Box 1378, Chino Valley, AZ 86323 has taken over the old Robert Sloan line of Nn3 parts and kits. These items will be re-issued under the name Republic Locomotive Works...

The San Juan Express, sponsored by Jim Trowbridge (of Trowbridge Press) and the Silverton Express, sponsored by John Vivian (of the Model Railroad General Store) will be run on the Cumbres & Toltec and Durango and Silverton Railroads respectively over September 3, 4 and 5, 1988. Write to Jim Trowbridge, 502 S. Cody St., Lakewood, CO 80226 for details...

Kappler Mill & Lumber Co., Divison of J&M Distributors, 1760 Monrovia, A-15, Costa Mesa, CA 92627 is now packaging their scribed siding in random lengths with 24 inches of combined length siding in each package...

Don't forget the **NMRA National Convention,** to be held July 18 to 24 in Birmingham, Alabama. Write to Jim Ketchersid, Box 55335, Birmingham, AL 35205-5335...

Beaver Creek Model Company has moved to P.O. Box 609, Tuolumne, CA 95379. They will continue to issue their excellent brass models and work towards redeveloping seven miles of the old Sierra Railroad right-of-way between Standard and Tuolumne...

Delton Locomotive Works, 120 Maple St., Delton, MI 49046 has their magnificent 1988 color catalog of G gauge items available. Among other models, it shows their new Colorado & Southern 2-6-0, their C&S four-wheeled caboose, and their three C&S passenger cars. They also have a new line of old time freight cars and the caboose shown in this issue's photo reviews. Don't miss this catalog – send $1.00 for postage and handling...

One half of the proceeds of the sales of Jim Finnell's beautiful print, "Last Train to Tuolumne" (see page 41 in this issue) go to the **Pacific Short Line Museum** in Cottage Grove, Oregon. These numbered and signed prints are $30.00 each from Chama Graphics, P.O. Box 9127, Santa Fe, NM 87504...

The **Friends of the East Broad Top,** 6301 N. Canfield Rd., Chicago, IL 60631 has a set of HO scale decals available for buildings in Saltillo, Pennsylvania. A map and notes on sign placement are included with these signs – $6.50 per set with a discount to FEBT members...

W&R Enterprises, P.O. Box 3235, Alhambra, CA 91803 has entered the narrow gauge field with a 36-ton O or On3 Heisler built by Samhongsa and a Plymouth gas-mechanical locomotive. Reserve yours now at your dealer or write to W&R for their brochure...

Don't forget the 1988 spring meet of the Denver Division of the **Rocky Mountain NMRA** being held June 10, 11 and 12 in Idaho Springs, Colorado. Write to Jim Coats, 4253 Fall River Rd., Idaho Springs, CO 80452 for details...

S&D Models, 13 Oatlands, Crawley, West Sussex, RH11 8EE, England has a price list of O scale (7mm) vehicles, figures, etc. The list includes 30 different accessory items such as blacksmith and roadmender's tools, automobile kits, track components, and some 1:43 scale figures. Write to them...

The **Original Whistle Stop** in Pasadena has moved to 2490 E. Colorado Blvd., Pasadena, CA 91107...

Timber West, distributed by Mikes's Trains & Hobbies, 104 W. Ocean Ave., Lompoc, CA 93436 has two new G gauge timber trestle kits . The first is 48 feet scale feet long and 10 feet high and sells for $39.95. The second is 84 scale feet long and 30 scale feet high. It sells for $59.95. Add $2.50 shipping. These bridges are made from maple and birch and are very strong...

Several readers have written in to say that the **White Pass & Yukon Railroad** is about to re-open. Marvin P. Taylor, the line's vice-president, announced that the railroad would operate at least two excursion trains a day between Skagway and the summit of White Pass beginning on September 27, 1988. Our informant, W.C. Curry, writes that #73, a 2-8-2 steam locomotive, will haul passengers the 1½ miles from the pier to the shops. Diesel #93 will take over from there...

Homefront Hobbies (formerly of Riverton, Utah) has moved and changed their name. They are now Oquirrh Mountain Hobbies at P.O. Box 15858 Salt Lake City, UT 84119. They have the fine line of 7mm scale Omen figures from England. Write for their catalog...

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A KIRKFIELD CRUSHED STONE COMPANY UPDATE

by E. B. Freeman

Niall MacKay's excellent article on the Kirkfield Crushed Stone Company Railroad in the January/February 1988 **GAZETTE** prompted me to share with **GAZETTE** readers some more information about this interesting company. The following data describing the company in 1959 are from a pamphlet by D. F. Hewitt: *The Limestone Industries of Ontario: Industrial Mineral Circular No. 5*, (1960) Ontario Department of Mines, pg. 42.

Stone at Kirkfield was quarried by drilling 6-inch by 45-foot deep holes in a 20- x 22-foot pattern. Three electric churn-drills were used for this process; however, some secondary blasting was necessary.

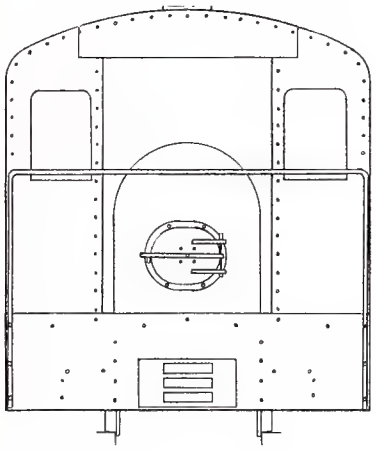
The main crushing plant, located south of the quarry, could handle 120 tons of stone per hour, and a semi-portable crushing plant in the quarry could handle 75 tons per hour. So each ten-hour shift produced close to 2000 tons of stone. The 3-foot gauge steam engines that hauled stone out of the quarry each pulled ten cars. Two trains operated on each shift while two steam engines were kept on standby. About 25 tons of stone was loaded into each ten-car train by a 2-cubic yard Bucyrus-Erie Diesel shovel. Meanwhile a 1-cubic yard Koehring 402 Diesel shovel loaded three 12-ton Mack trucks with stone for the semi-portable crushing plant in the quarry. The company's traveling railway crane had a 1½ yard capacity clam bucket and was used to load trucks and and railway cars.

As a geologist, I am puzzled by the stone dump car plans, as these cars do not appear suitable for use with a rotary dumper, especially if one side is hinged as stated. I suspect the large hooks on the car sides shown in the photo on page 30 of the January/February issue were used to tip the contents of the cars out of the hinged side into a bin or primary crusher.

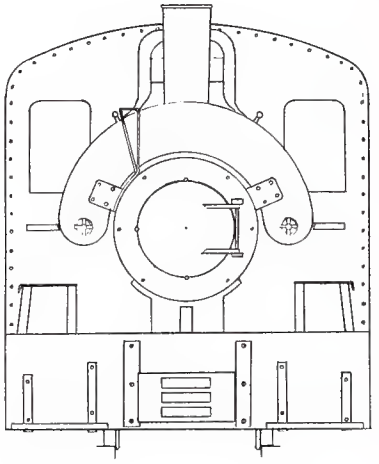
The stone from the Kirkfield quarry was used mainly for road stone, concrete aggregate, and railway ballast, but some was used for asphalt filler and flux stone as well.

KIRKFIELD CRUSHED STONE COMPANY VULCAN #4104

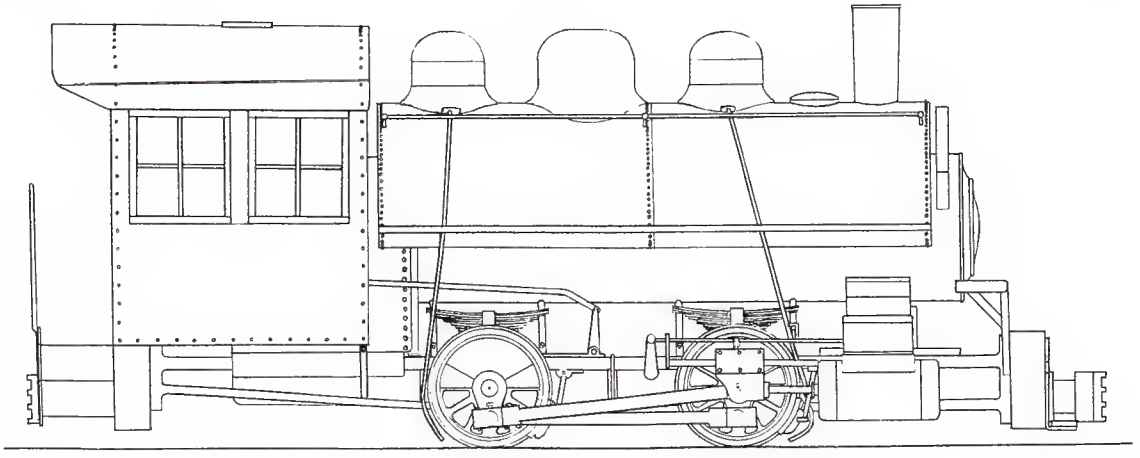
DRAWN BY BARRY McCLELLAN

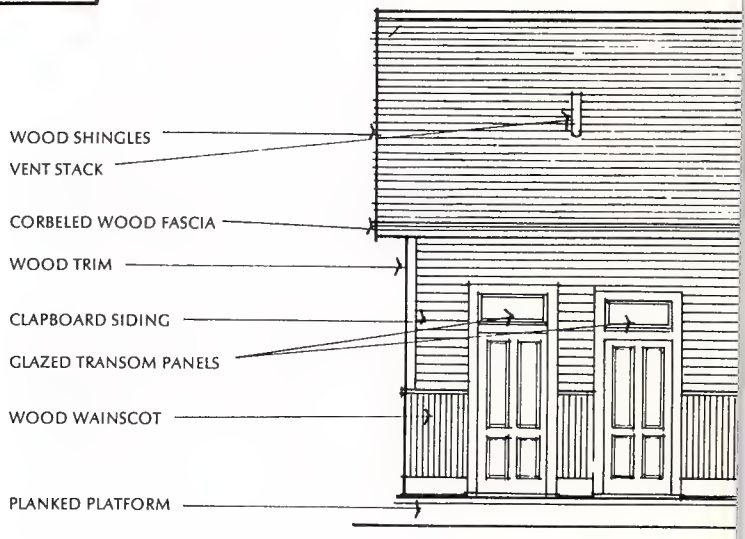


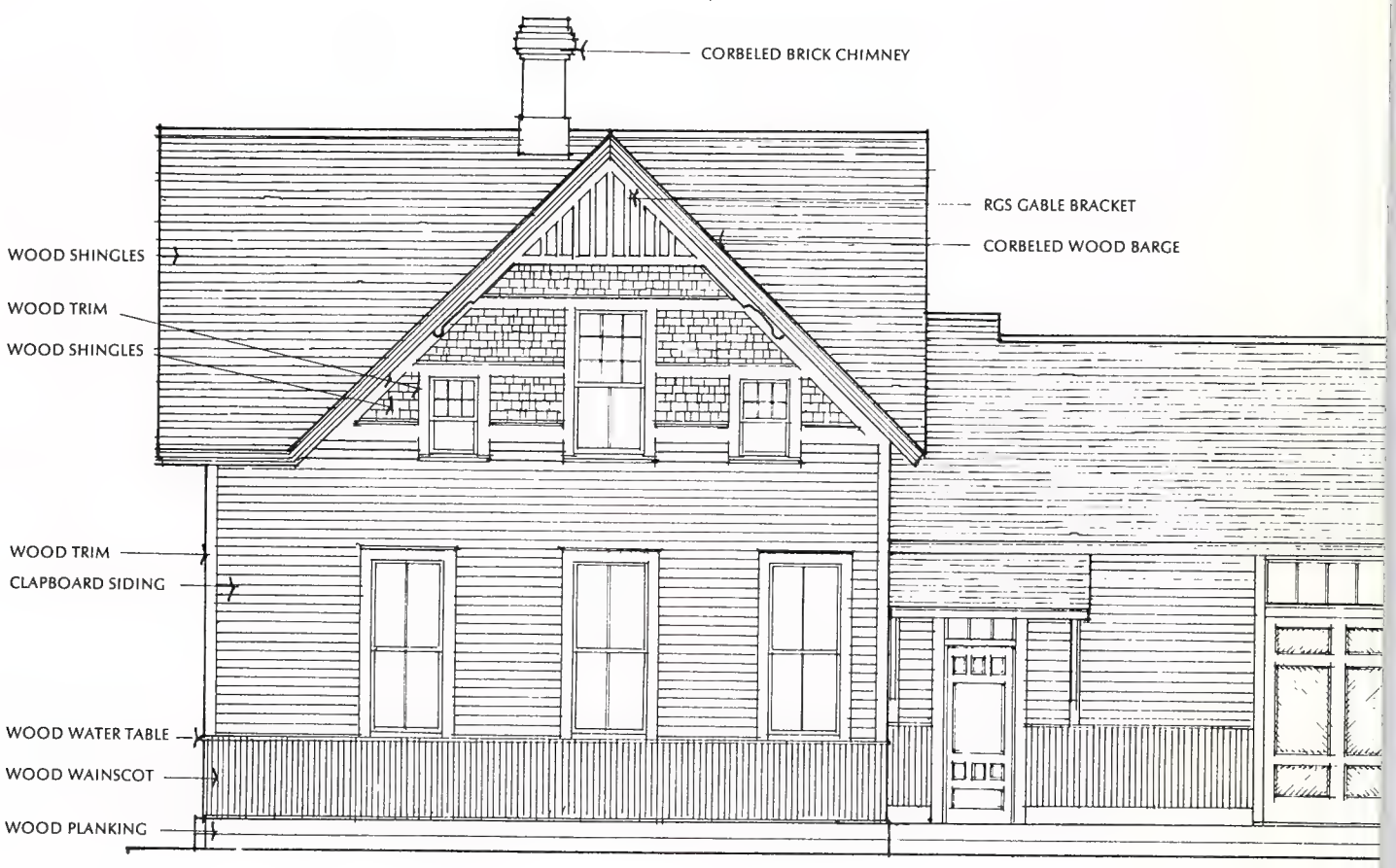
This Kirkfield Crushed Stone Company engine was built in 1930 by Vulcan and given construction number 4104. She survives today at Milton Ontario. According to the *Canadian Trackside Guide*, three more of the Kirkfield 3-foot gauge steam engines are still in the province of Ontario: Vulcan #4103 is also at Milton, a 1909 Vulcan 0-4-0 (construction number 1419) is at Langstaff, and a 1913 Montreal Locomotive Works engine (construction number 54319) is at Midhurst.



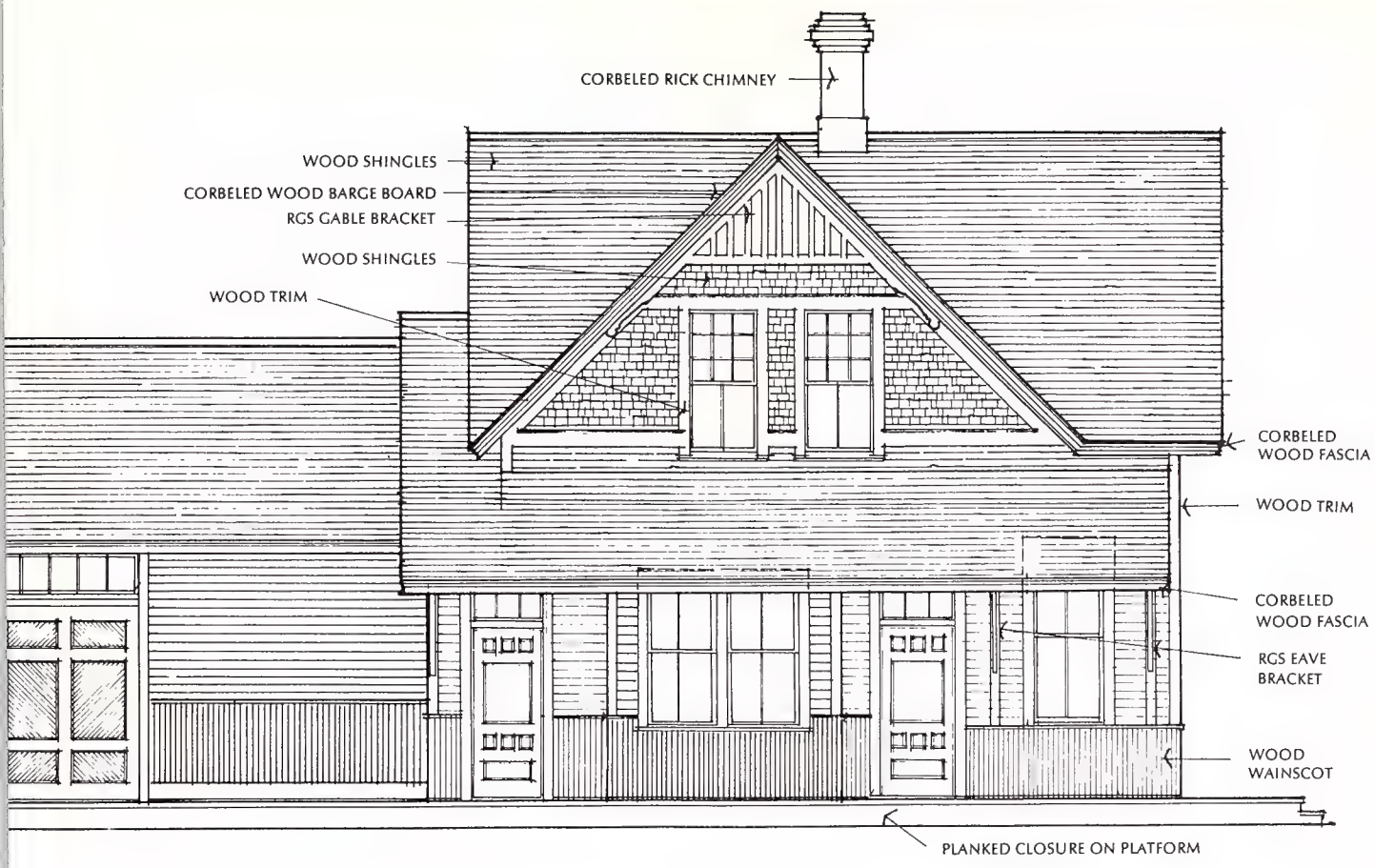
SCALE: ¼-INCH = 1 FOOT







WEST ELEVATION



MAINLINE ELEVATION (EAST)

DOLORES DEPOT

BY MIKE BLAZEK
HO SCALE

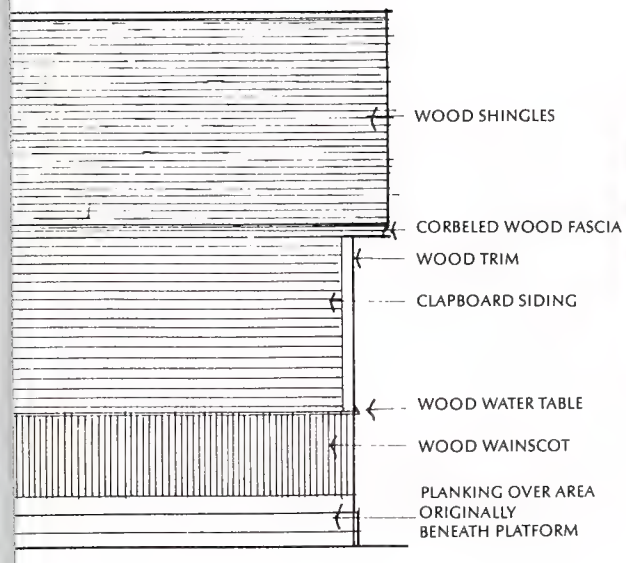
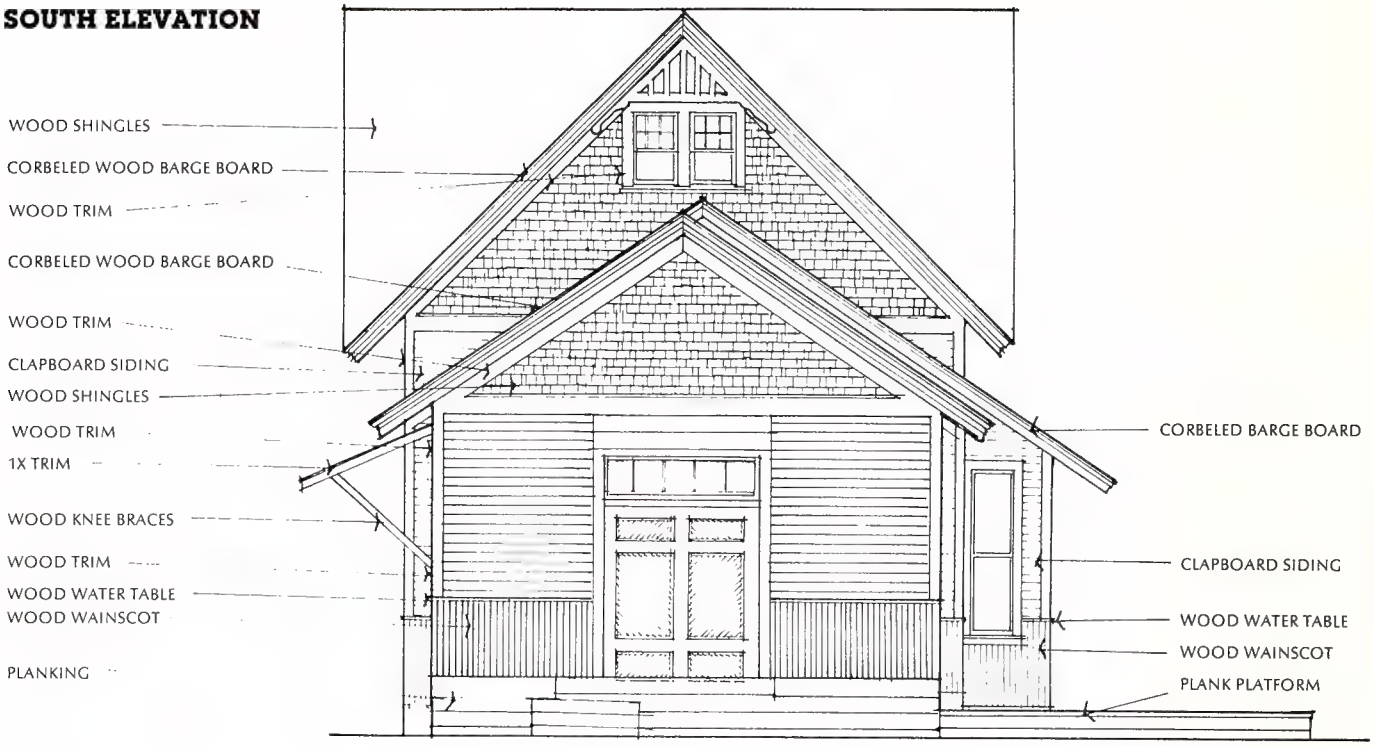


Photo by Al Chione, courtesy of Walt Stampfli.

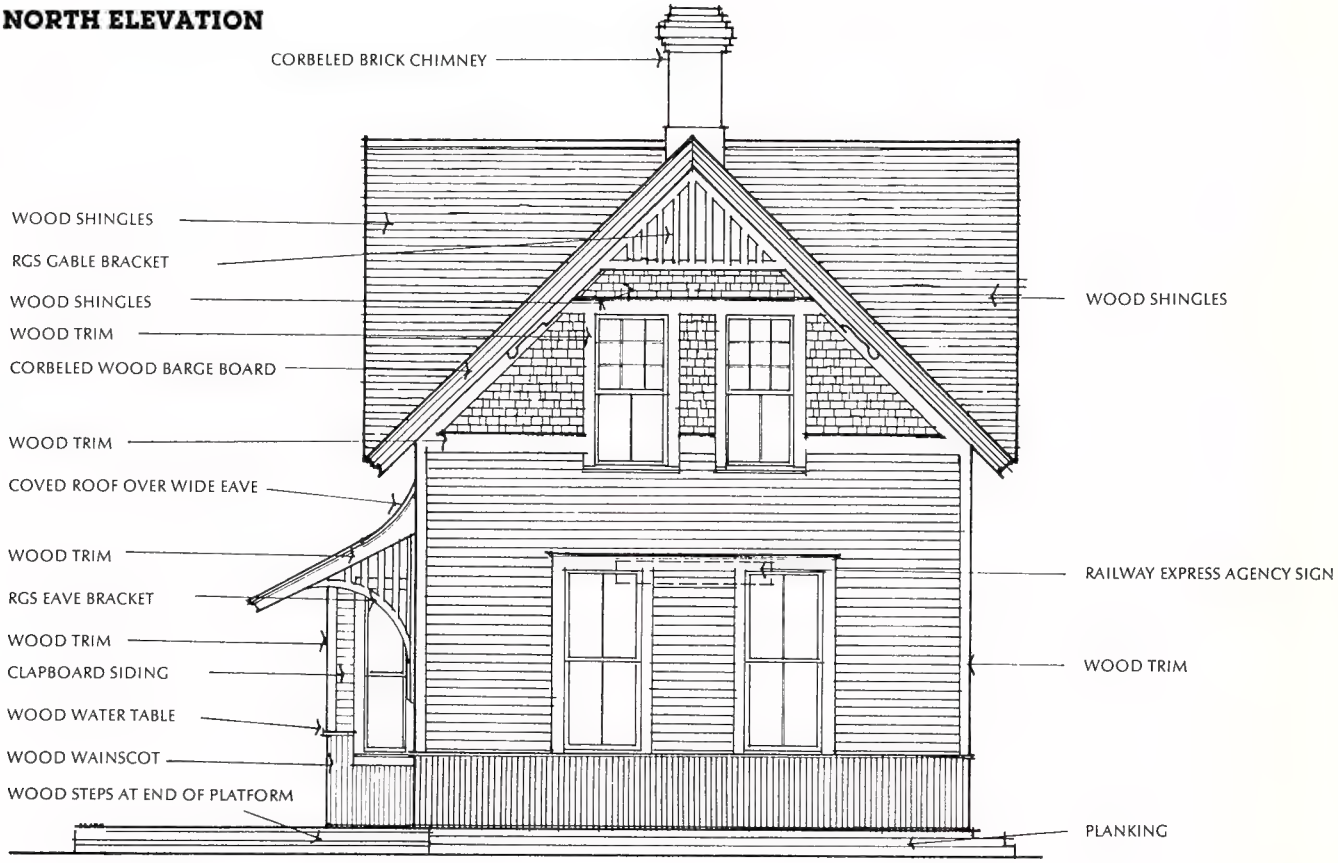
DOLORES DEPOT

BY MIKE BLAZEK
HO SCALE

SOUTH ELEVATION



NORTH ELEVATION



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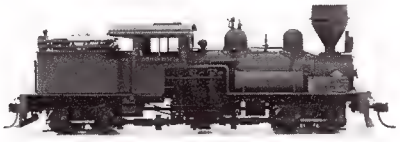

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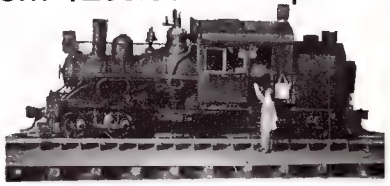

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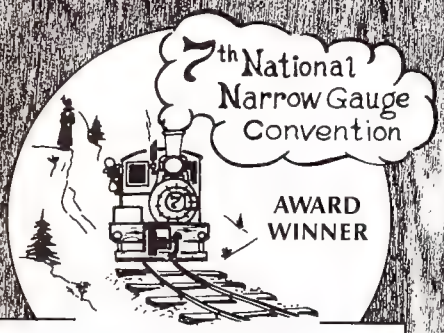
The Doane Valley Lumber Company Engine House

by Charles C. Doan



GAZETTE AWARD

The moment I saw Charles Doan's O scale engine house in the contest room at the Seventh National Narrow Gauge Convention in Pasadena last September, I knew that I was going to pick it as the 1987 **GAZETTE** *Award winner. This engine house is the most realistic and detailed model of a structure I have ever seen. The striking color photos by Lane Stewart and the dramatic black and white photos by Phil Greenshields and Tim Brooks shown here will give you an opportunity to see what I mean.*

Bob Brown

Getting Started

A few years ago I saw an ad in the **GAZETTE** for the first of the excellent series of O scale machinery kits made by C.H.B. Models. The availability of these kits, made it possible for me to indulge my strong interest in old time machine shops and build my O scale Doane Valley Lumber Company Engine House. Most of my model railroad projects seem to get "out of hand" – that is, they seem to take on a life of their own and become more detailed and more time-consuming than I ever anticipate at the start. This engine house was no exception – it took me 4½ years of off-and-on labor to finish.

Although my engine house is free-lanced, it is based on many photos from a variety of logging and shortline railroad books, vintage machine shop textbooks, and magazine articles on historical structures and shops. I also visited the shops of the Sierra Railway in Jamestown, California, the West Side and Cherry Valley shops in Tuolumne City, California, and the Knight Foundry in Sutter Creek, California. After all this study, I worked out a general layout for the tools, bins, and work benches for my shop interior and made up a floor plan that incorporated the most interesting features of many shops.

I tried many techniques I had not used before in building this model and I tended to "plunge right in" instead of experimenting first. The result was that I had to tear out and rebuild quite a bit of the engine house as I went along. In this article I'll leave out the details of those sad episodes and tell you about the things I did that worked fine.

The Floor

After I had my floor plan, I started by laying out the floor boards with individual planks stained with Floquil SP Light Gray and washed with Floquil Oak stain. The planks were distressed using a knife and a fine wire brush – real dirt and motor oil were rubbed into the floor for additional realism. I simulated oil and grease drippings around the track with blackened finely powdered dirt held down with white glue. Stained with oily black paint and real oil and finished off with a dab of Floquil Hi-Gloss, this dirt looks like oil and grease spilled only moments before. The dirty areas around the forge and the steam engine were also "landscaped" with real dirt.

The Walls

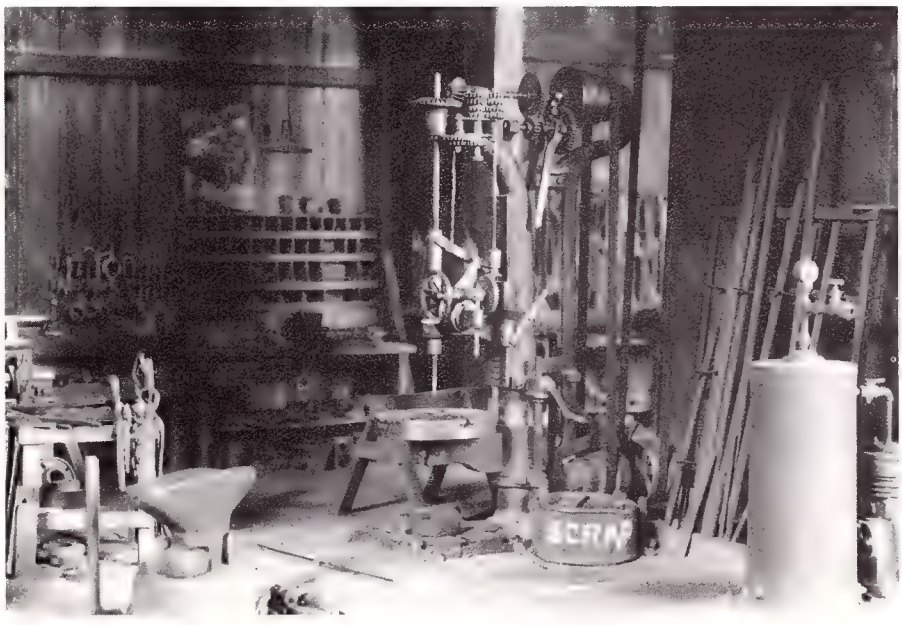
Once I was satisfied with the floor I started building up the walls, board by board. The post and beam frame was built up from pre-stained beams covered with pre-stained wall planks. The outsides of these planks were wiped with Campbell Models' Creosote Stain and the insides were wiped with Floquil SP Light Gray. I grained and distressed the outsides of the planks and added knot holes on both sides with a 0.3mm drafting pencil. A final wash of Floquil Oak stain added color to these boards and killed the shine of the pencil knots.

After the planks were glued to the frame of the building I blackened the inner side of

The Doane Valley Engine House forge and its scratch-built power hacksaw are surrounded by clutter based on prototype photos of such installations. *Photo by Tim Brooks.*

This speeder looks like it is ready to zip right off on some important task. Details like this make the author's engine house seem to be in daily use. *Photo by Phil Greenshields.*

Clearly the machinist has just stepped out for a coffee break leaving his C.H.B. Models' drill press momentarily unattended. The scratch-built air compressor on the far right and the anvil on the left also wait for workers to return and put them to good use. *Photo by Tim Brooks.*

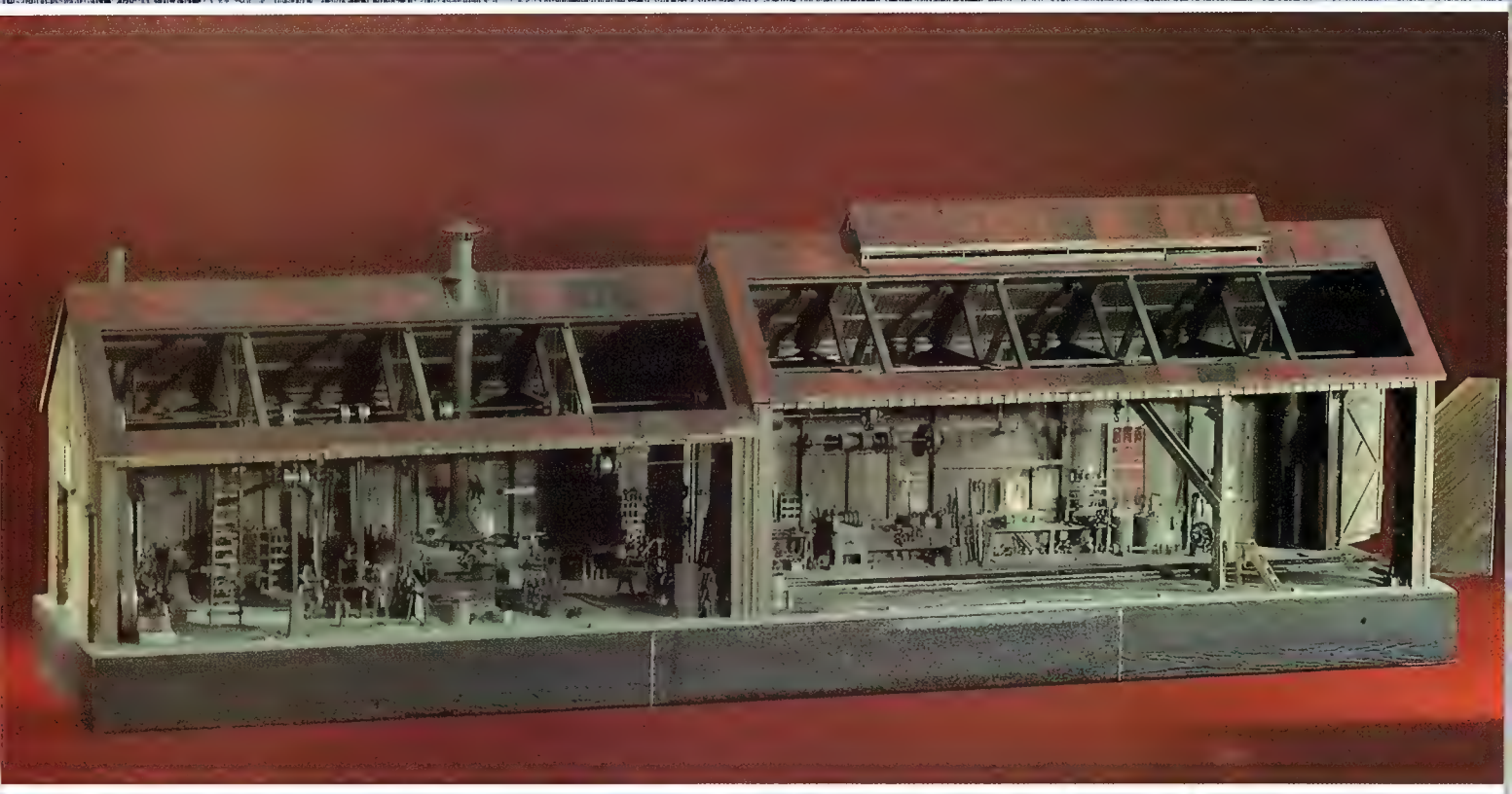


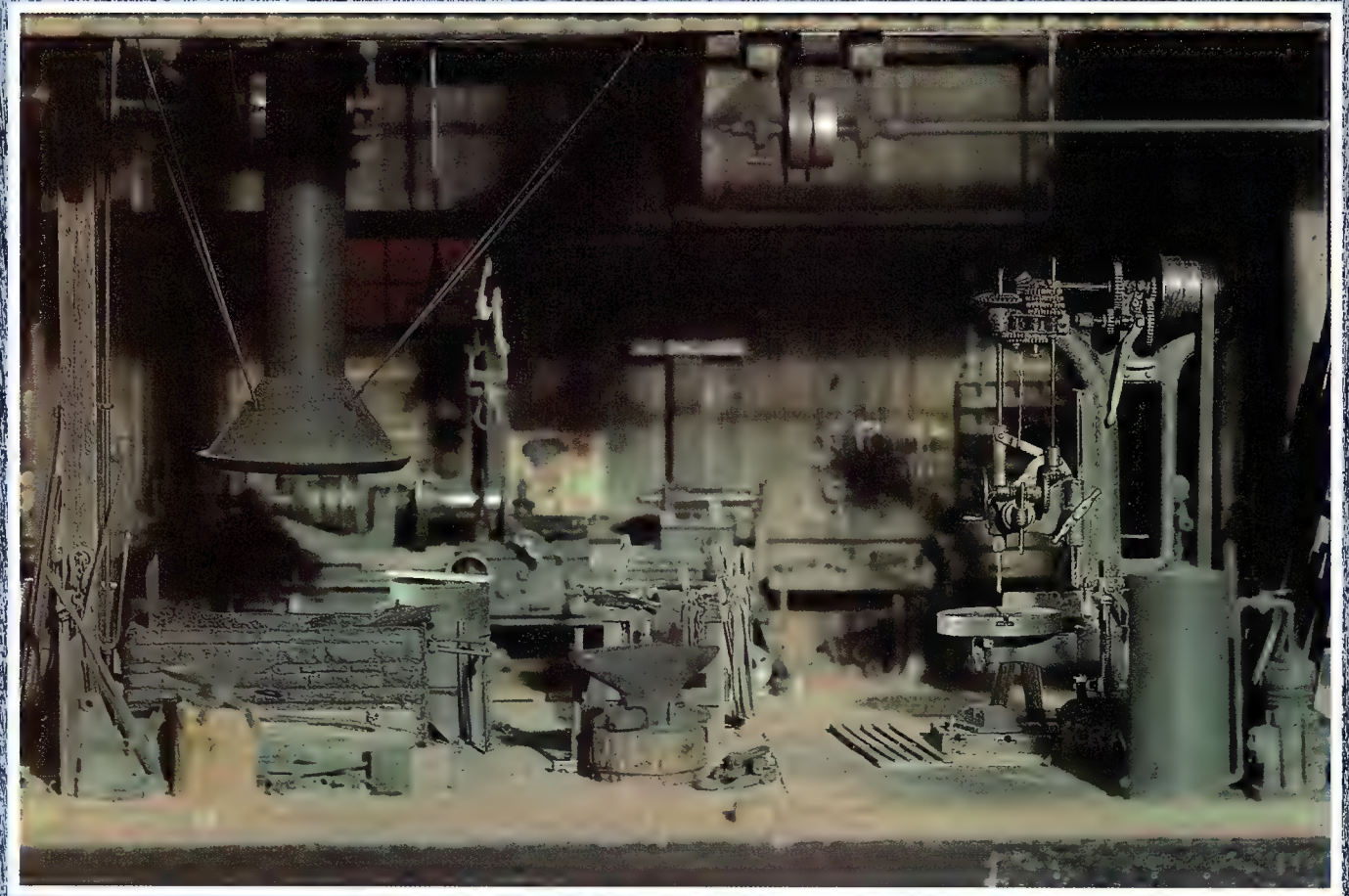
the walls with smoke from burning styrene. (If you attempt this, make sure you do this outdoors away from people and buildings and don't breath any of the fumes from the burning styrene.) This method leaves a black powder residue that can be brushed off with a soft brush leaving a realistic approximation of that great, smoke-darkened look commonly found in old engine houses and forges. After this treatment I lightly washed some of the interior boards with Dio-Sol around the knots to highlight the grain.

I simulated rain and mud splash at the bottom of the outside walls with a wash of Floquil Driftwood stain followed by some of their Grimy Black. Nail holes were then added on both sides of the walls using the 0.3mm drafting pencil. I find that the shiny dots of "lead" look like galvanized nails but if you wish, you can eliminate the shine with a light wash of stain.

The Roof

The roof was built after the interior was complete but I will describe it next because I used the same weathering techniques on the roof timbers as on the walls. The eleven



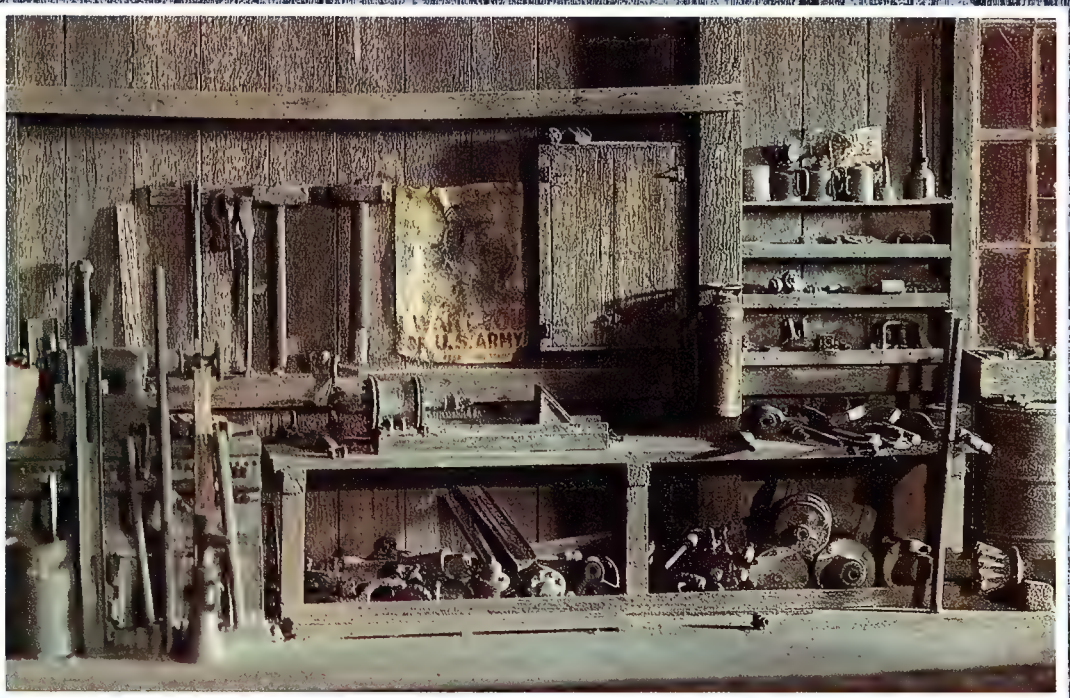


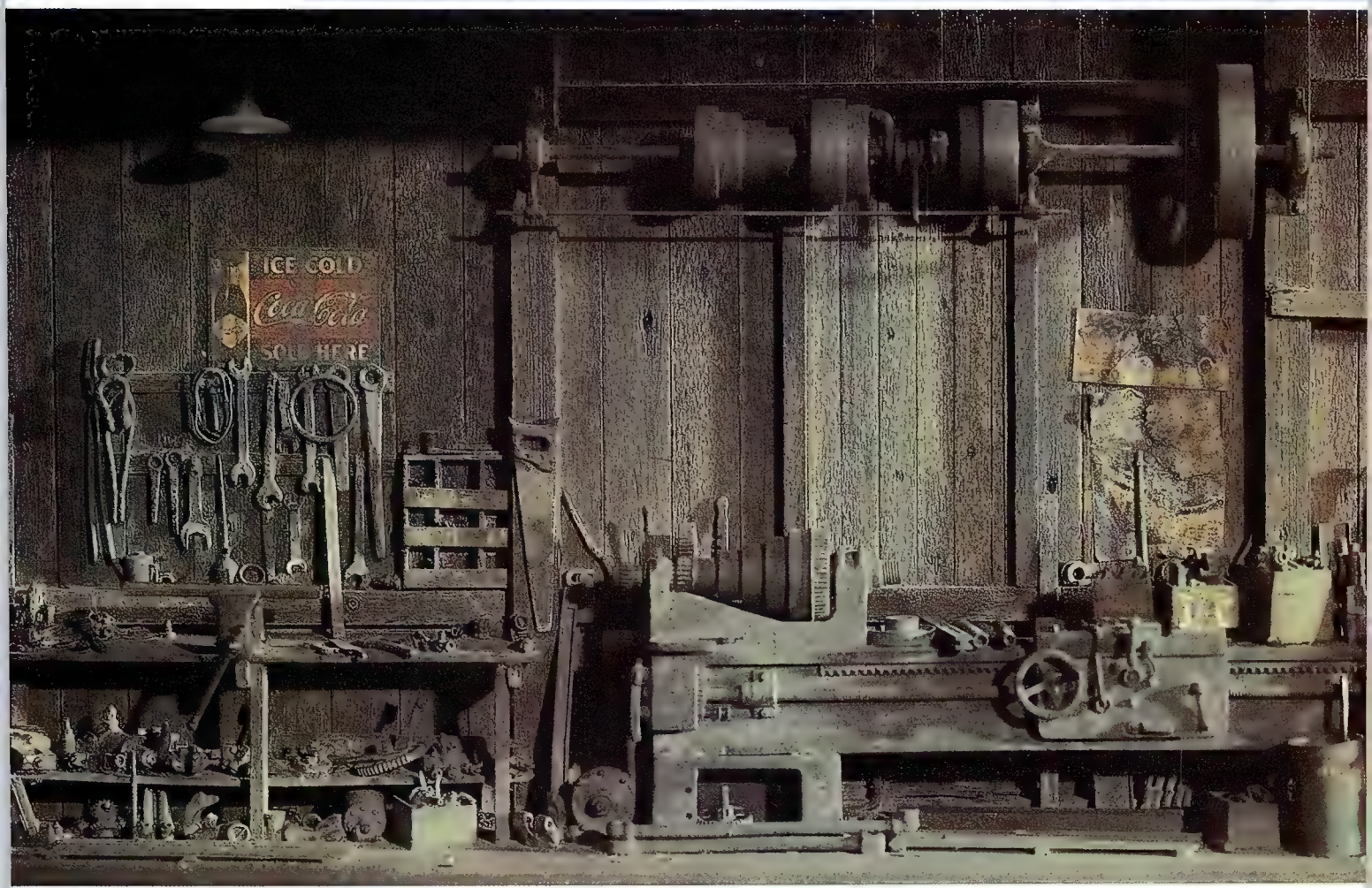
Opposite top:
This overall view shows the general plan of the author's Doane Valley Lumber Company Engine House. The machine shop is on the left of the building. *Photo by Lane Stewart.*

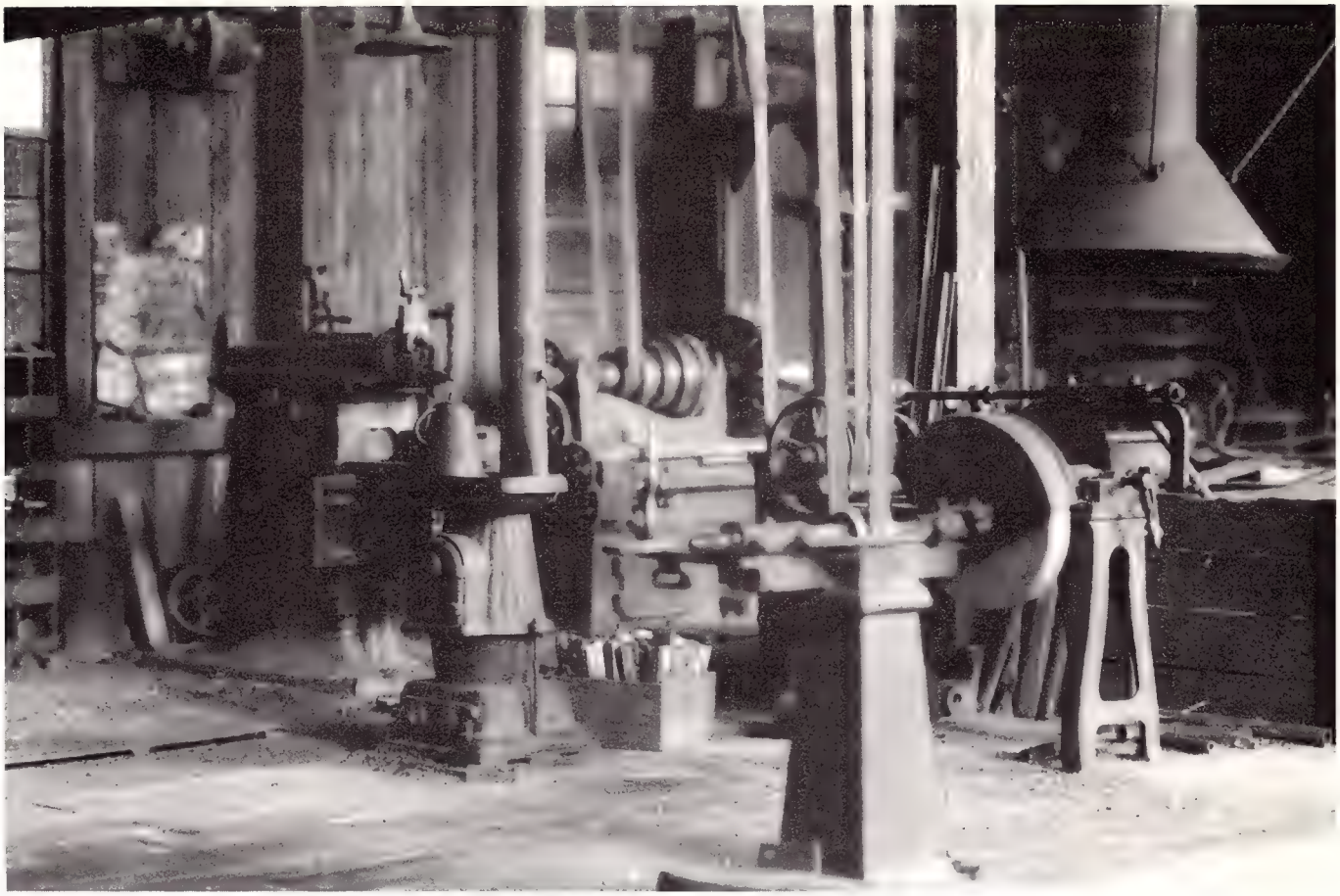
Opposite bottom:
The forge, C.H.B. Models' drill press, and scratch-built air compressor await the return of their operators. *Photo by Lane Stewart.*

Right:
Every nook and cranny of the author's Doane Valley Engine House is crowded with details. Although much of the building is clearly still in use, this group of tools and parts seem to be moldering into decay. *Photo by Lane Stewart.*

Below:
Even in the best run and busiest engine houses some things just wear out or become obsolete. This derelict engine lathe is obviously no longer in use since its belts aren't even hooked-up. *Photo by Lane Stewart.*







The author's engine house is equipped with a C.H.B. Models' grinder (foreground) and is heated by a Grandt Line stove (left). *Photo by Tim Brooks.*

The author scratch-built this little blacksmith's drill from information in a vintage Sears and Robuck catalog. The cabinet next to it positively invites you to open it to find tools needed for a job at hand. Wood-grained walls typify the rough finished planks used in many a prototype engine house. Little bits and pieces in the corners echo the years of construction and repair that have occurred in this fine facility. *Photo by Tim Brooks.*

---

roof trusses were built in a strip wood jig and stained to match the interior walls. The roof trusses were covered with panels of pre-stained scribed siding with the scribes showing on the inside of the building. The inside of the roof was heavily "smoked" with styrene smoke to simulate years of use. The outside of the roof was covered with individual strips of Rock Quarry red tar paper which had been pre-stained with Floquil Boxcar Red. Nail holes were added with the 0.3mm drafting pencil and excess tar was simulated with a mixture of white glue and black paint. I got the roof color and weathering ideas from the old West Side Lumber Company shops in Tuolumne City, California.

Interior Details

Once the floor was finished and the back walls were attached, I started adding the interior details. Parts bins and work benches were built-up and covered with commercial tool castings painted with varying shades of Rust and Grimy Black. Some of the junk was glued in place and then lightly coated with old motor oil. This old oil was then soaked up with finely powdered dirt and the junk was brushed clean with a stiff-bristled brush. A final dusting of powdered dirt completed the effect of old "grungy" parts that had been lying about for years.

For the most part, the C.H.B. Models' machinery kits were built-up following the kit directions. I did reverse the valve gear on the steam engine so it could be seen better. A Grandt Line builder's plate and a new water glass made out of clear nylon fish line were added to the boiler. Two C.H.B. Models' lathe kits were combined to create the long derelict lathe in the engine house. All the machinery was painted either dark green or Floquil Grimy Black. Bare metal areas were washed with Grimy Black and burnished with my finger to create a used, worn look. Polished areas, such as hand-turned wheels, were highlighted with Floquil Gloss. I had to scratch-build some pieces of equipment to round out my shop. The power hacksaw was built up from styrene and some C.H.B. Models' parts. The upright air compressor came from parts in my scrapbox and the blacksmith drill contains a number of old watch parts. I used my vintage machine shop textbooks for the details of these machines.

All of the machines in my Doane Valley Engine House are powered by an overhead drive belt system connected to the steam engine. The drive shafts and belts were installed after the roof trusses were in place. This created sort of a "ship-in-the-bottle" problem, especially when I had to thread and paint the belts. I used 3 mil Mylar drafting film for the belts. This material is totally stable, unlike paper which may sag from humidity and temperature changes. Once all the shafts and pulleys were aligned, the belts were glued in place with super glue. The belts were painted in place using military modelling paints to simulate leather.

I tried to include "in service" details throughout the engine house to make it look like the building was still in actual use. These details include such things as door wear scrapes on the floor, oil stains around the track, steam engine, and drive shaft bearings, and loose dirt and metal chips scattered about.

All in all I enjoyed the four and one-half years of frustrations and pleasures I experienced during the building of the Doane Valley Engine House. I am most grateful to the various manufacturers who made all those nifty kits, parts, and paints for me to play with, and to the **GAZETTE** for allowing me to share some of my ideas with you.

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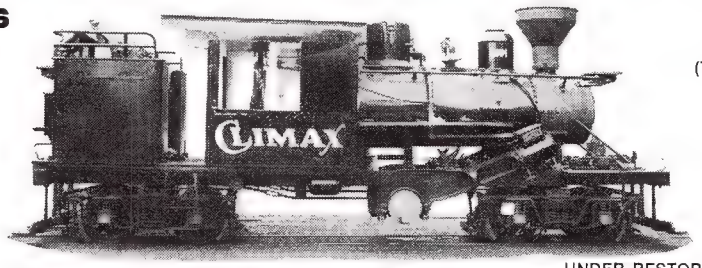

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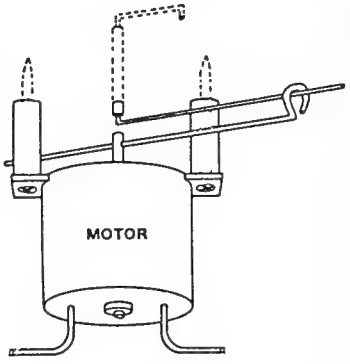

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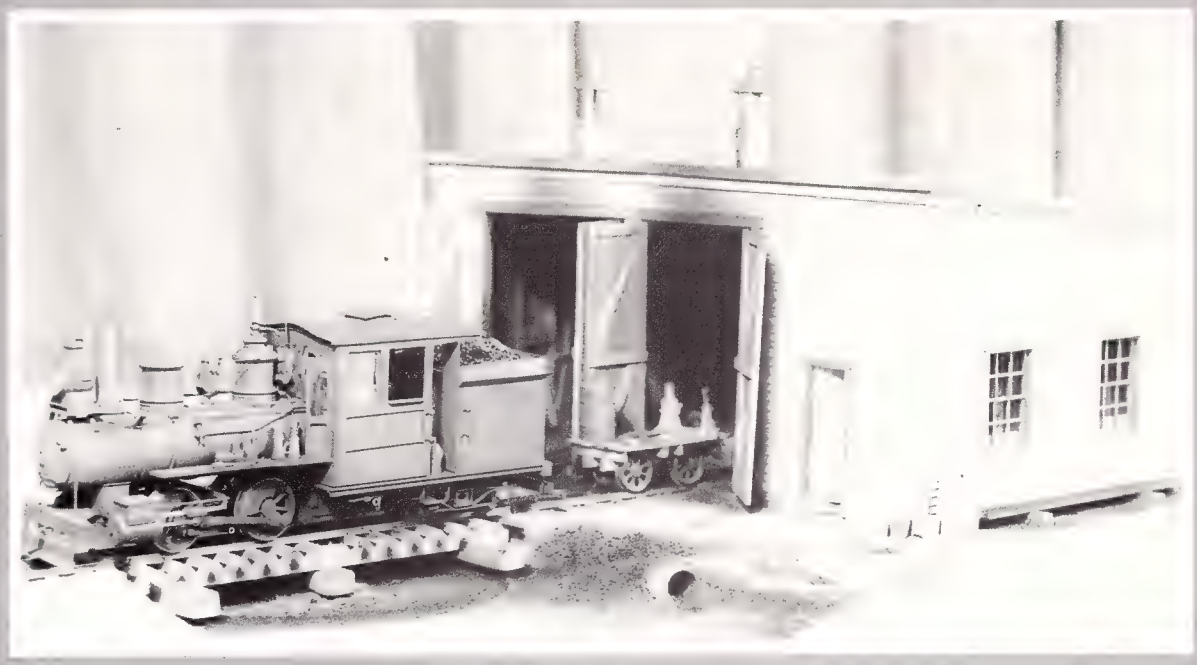
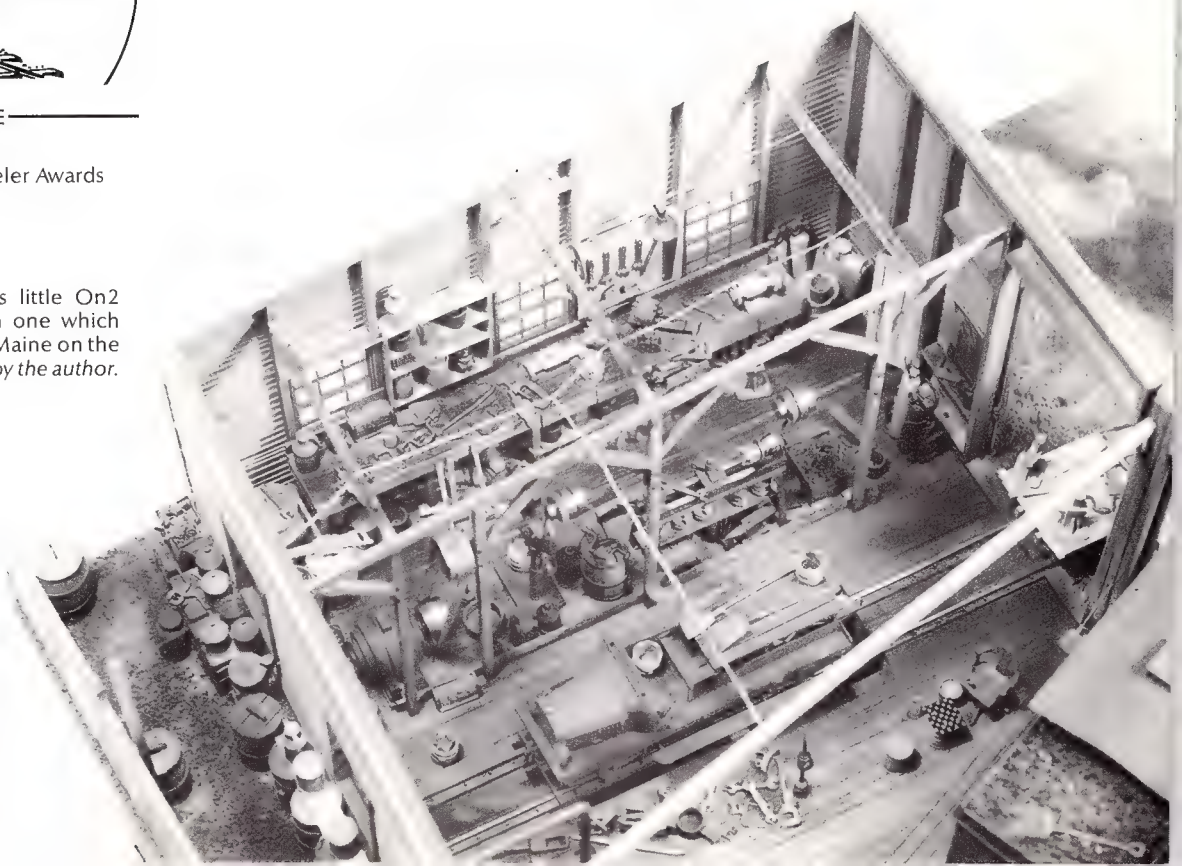


FIRST PLACE
Displays
Maine Two-Foot Modeler Awards

I built my little On2 roundhouse display for the sole purpose of winning First Place in Displays at the 1971 NMRA Convention in London. It was built to go in a box that would fit under the somewhat cramped seats available on our cheap charter flight. For all our planning, it didn't quite fit so my wife, Irene, spent the twelve-hour flight with the specially reinforced box under her feet. I am pleased to say that my effort (and Irene's discomfort) paid off. The model won First Place in Displays in London. Last year I dusted my On2 roundhouse off and was pleased to win First Place in Displays

Title photo: The author's little On2 roundhouse is based on one which was located in Gardiner, Maine on the Kennebec Central. *Photo by the author.*



The interior of the author's prize-winning roundhouse showing the clutter of tools and other details. *Photo by the author.*

The Kennebec Central roundhouse at Gardiner, Maine, on which the author's On2 roundhouse was based. *Photo, collection of the author.*

and the Maine Two-Foot Modeler Award at the Seventh National Narrow Gauge Convention in Pasadena.

This well-traveled roundhouse is one of several models I built back in the late 1960s and early 1970s for the specific purpose of winning contests. That was back before the **GAZETTE** was born, when I had some free time and could afford to spend six months building one model.

Looking back on my contest modeling days and the layout building I do now, I urge anyone who seriously wants to improve his or her model building skills to find some time and try building a contest model. Make no mistake about it, contest models are different than regular models. Not necessarily better, but different. I found that I had to "hype" myself up to build a contest model as well as prepare myself to make no compromises. None. Each part had to be the best I could do. Only then did I feel I had a chance at winning a contest.

In building a contest model I use the same approach I would use for any complex model. I divide the job into "bite-sized" chunks, each of which can be finished and "swallowed one bite at a time." So if I sit down at my work bench and decide to frame-up one wall in one evening, the wall

The Kennebec Central Roundhouse just shows behind these trainmen posing in front of their locomotive. *Photo, collection of Ed Bond.*

gets completed and I go away feeling I have accomplished something, rather than going away thinking about all the parts that are still unfinished. I may not get back to the workbench for several days, (or even weeks or months) but I know that what I have finished is the best I can do and that I have definite plans for completing the project a step at a time.

When I have finished a part or subassembly of a contest model, I find that this "having done my best" feeling is essential. I can't stand nagging doubts about the quality of my work or the feeling that I have left something off that really should be there. If you try this method, you will come to know and appreciate that good feeling when you've put forth your maximum effort. How often have you heard the remark: "You can't see it, and it won't show anyway, so I didn't put it on my model"? There's no place for that kind of thinking if you're going to make contest-worthy models. If the prototype had it and it's physically possible in your scale, put it on. You'll get rid of all doubts and will know you have not compromised. The "can't see it, leave it off" method is fine for models that will be part of layouts, but not for contest models.

My little roundhouse was based on the 2-foot gauge Kennebec Central roundhouse at Gardiner, Maine, and has an extension along one side for a small machine shop. First the individual prestained planks of the floor were put down on a piece of Celotex. Then the walls were framed and covered with very thin stripwood cut for me by **GAZETTE** author and prize-winning modeler, Bill Coffey. Each strip of siding was pre-stained (as were all the other pieces of wood in the building). You can actually see light through the stripwood that covers the walls.

The windows are Grandt Line frameless window castings with wooden frames. The doors swing on paper hinges and the roof is covered with strips of Kleenex tissue. The smoke jacks on the roof are brass turnings and cut-out brass tubing painted a terra-cotta color. All of the interior details were cast in Cerro Bend and include many parts made from my own patterns. Notice the checker game in one of the photos. The lighting system works and is wired through the knob and tube wiring in the rafters.

I really enjoyed building this model but have found it hard to do work of this detail level as I build my Tuolumne Forks layout. I know that each model is not going to a contest and when I work on a 28-foot by 28-foot layout, I think in terms of building the whole layout and how each part fits into the whole. Compromises are made and I seem to be saying more and more, "It doesn't show, so don't put it in" but I still enjoy building my models. It's just a different kind of satisfaction than what I got from building contest models. Actually, I urge you to try both styles of modeling because each is rewarding in its own way.

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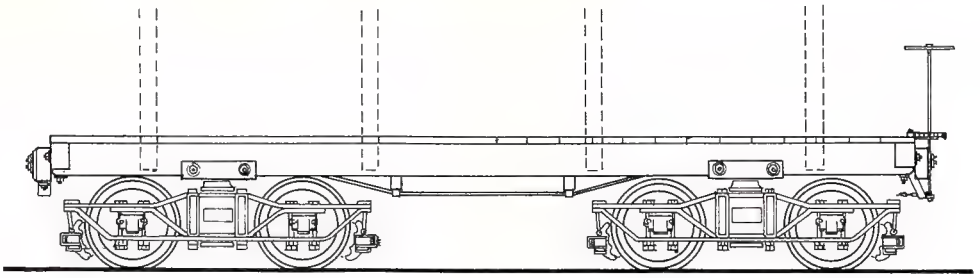

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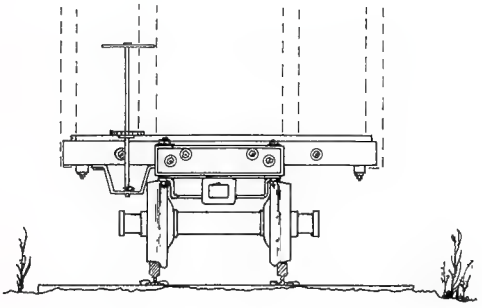

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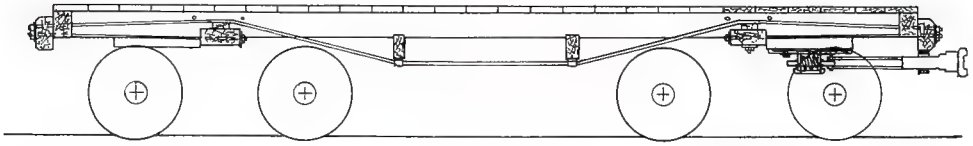

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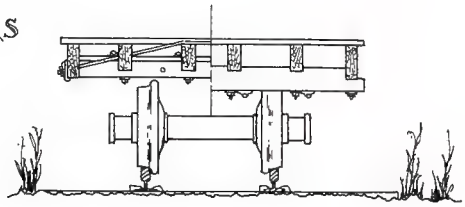

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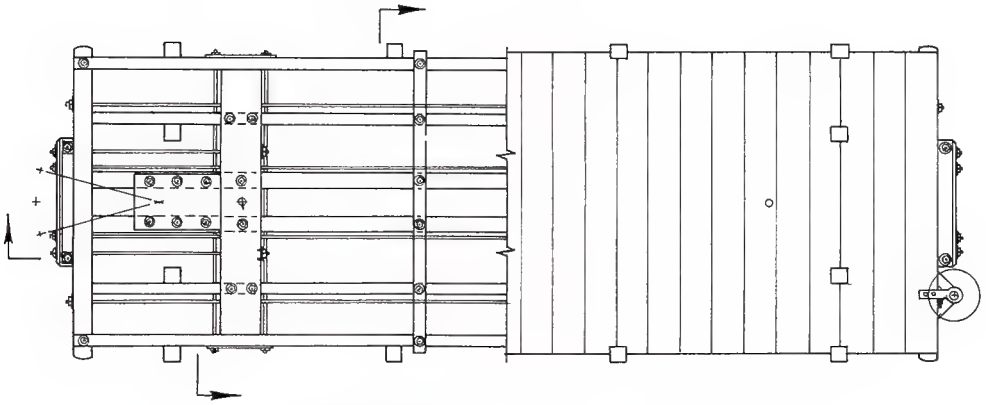

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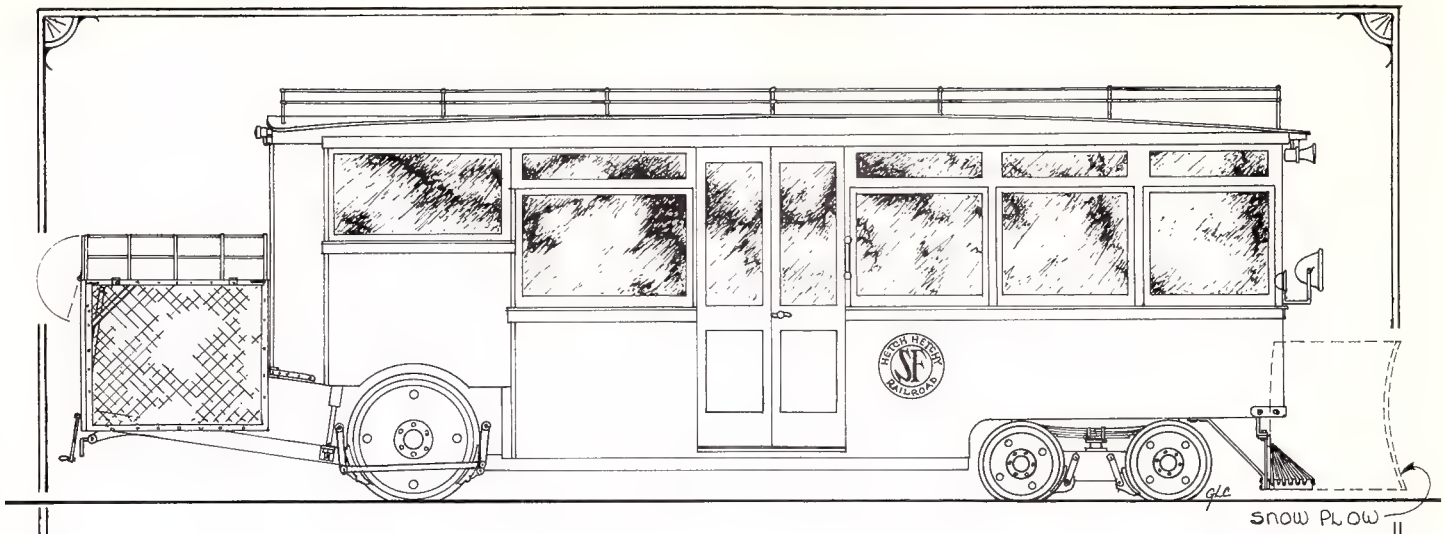

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Motor Car No. 24

c. 1923

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Cleveland,
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body:
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SONS
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Drawn by Gary Caviglia
June 1987

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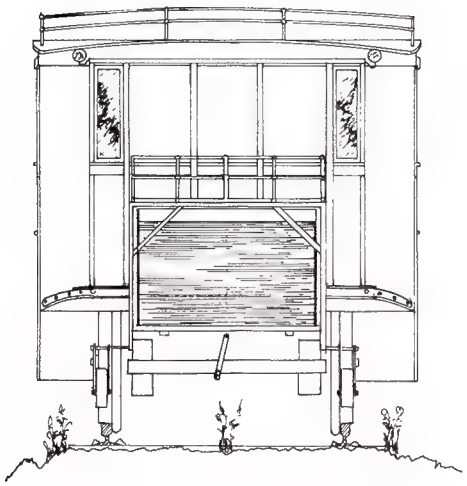

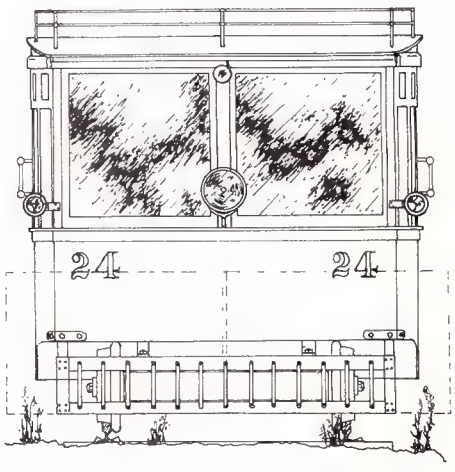

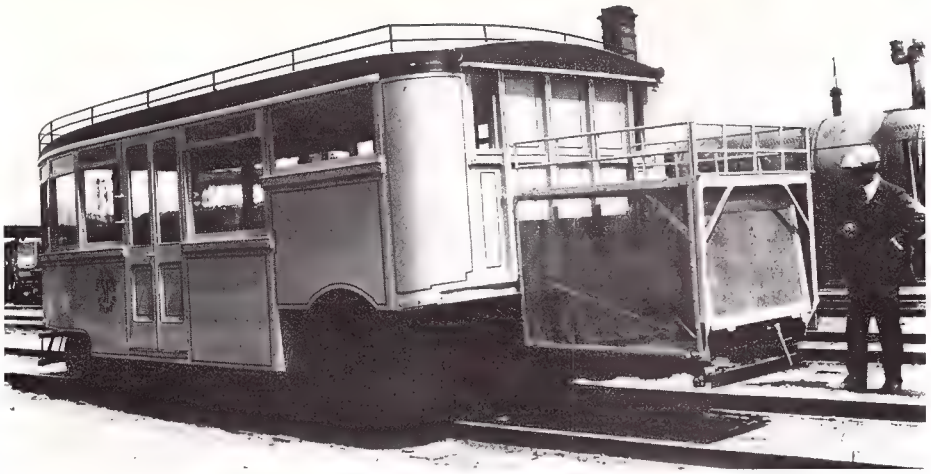

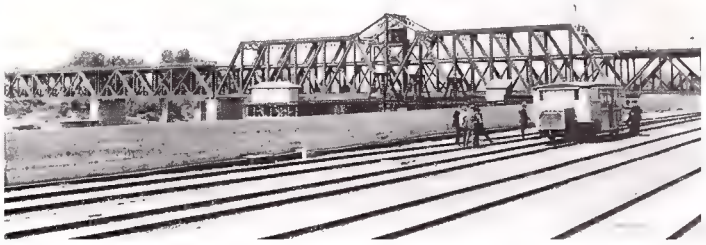

Hetch Hetchy Railroad

Motor Car No. 24

c. 1923

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Although most of my HO gauge 23 foot by 42 foot Franklin & South Manchester Railroad (see the April 1986 and April 1987 MODEL RAILROADERs and the November 1986 RAILROAD MODEL CRAFTSMAN) is set in a heavy industrial and urban setting, I still have a weakness for backwoods railroading. Before I built the F&SM, I spent some 45 eight-to-ten-hour days building a 4- x 8-foot experimental scene. This was the backwoods scene described here and I eventually worked it into my main layout in the same way John Allen worked his original little Gorre & Daphetid scene into his larger main layout.

The Backwoods Line of the HO Scale

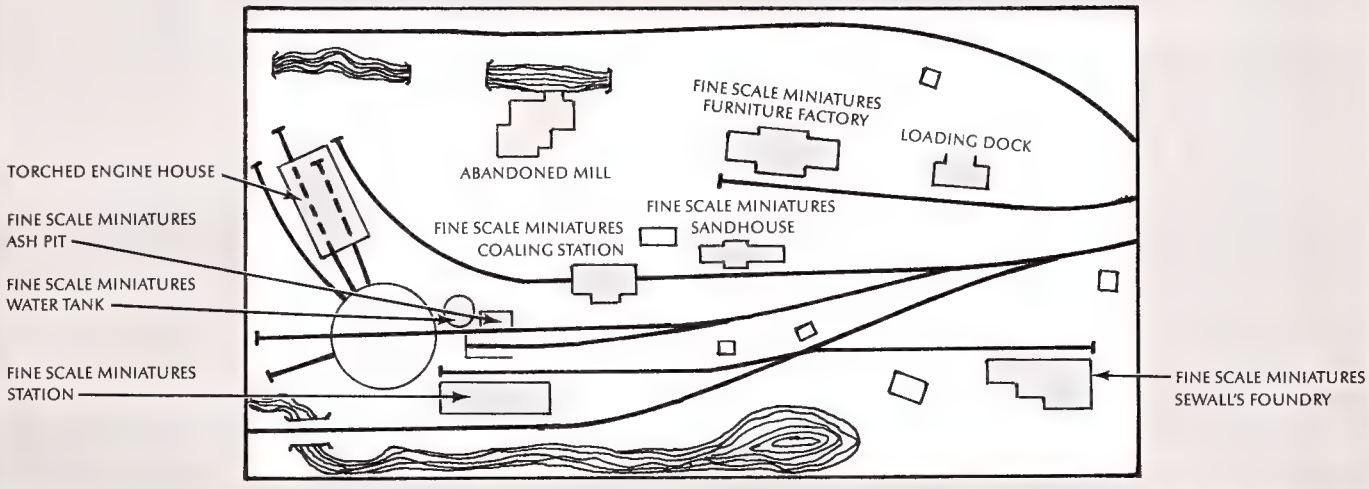
FRANKLIN & SOUTH MANCHESTER RAILROAD

by George Selios
Photos by the author

All of the track on my backwoods scene is code 70 or 55 commercial flextrack. Before I spiked this track down I nipped the ends of several of the ties with rail nippers. This gives the track a nice uneven, backwoodsy look. Once the track was down, wired, and had trains running reliably over it, I sprayed the mainline with Pactra Light Earth and the sidings with Floquil Rail Brown, Rust, and Roof Brown. This gave a nice color variation like that seen in real track. All the ties were then brushed with Floquil Oak stain to give them a brownish creosote look, but while applying the Oak, I used another brush to apply Floquil Driftwood stain to some of the ties to give them a gray, weathered look with just a slight hint of tan. Little used sidings needed more Driftwood to get a really gray, weathered look.

I really enjoyed doing the rock retaining walls on my backwoods branch. The origi-

The Backwoods Line of the Franklin & South Manchester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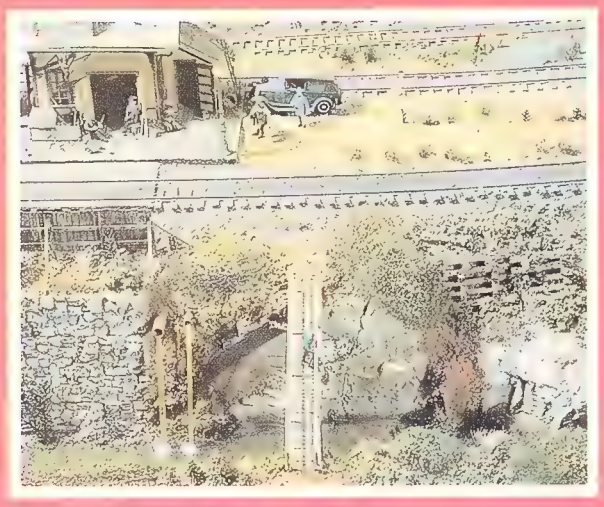

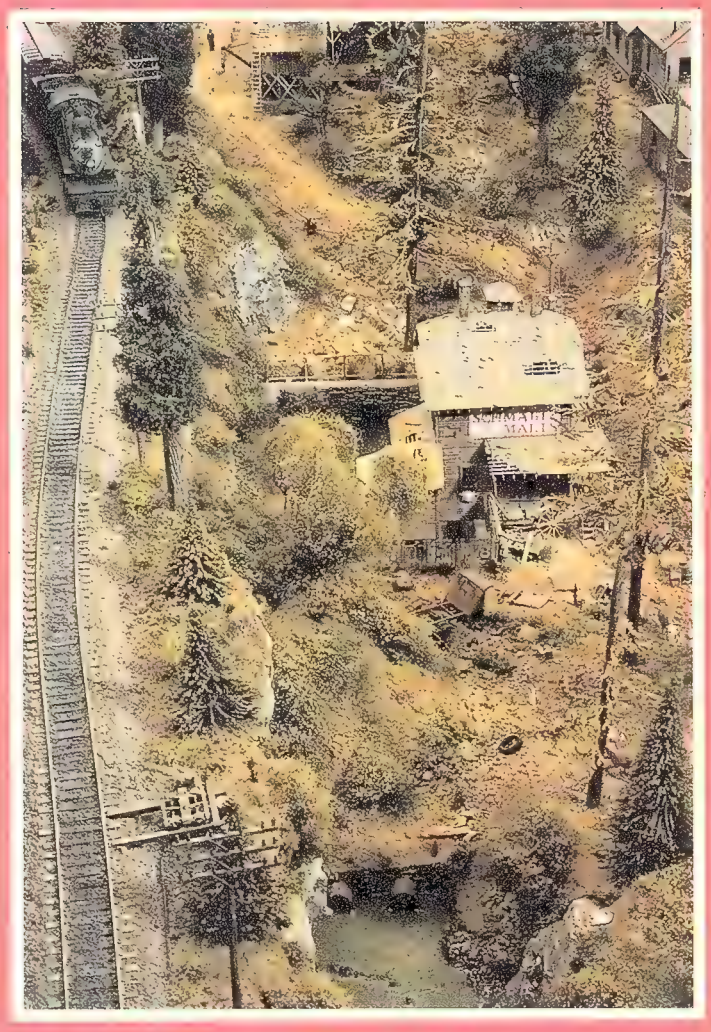

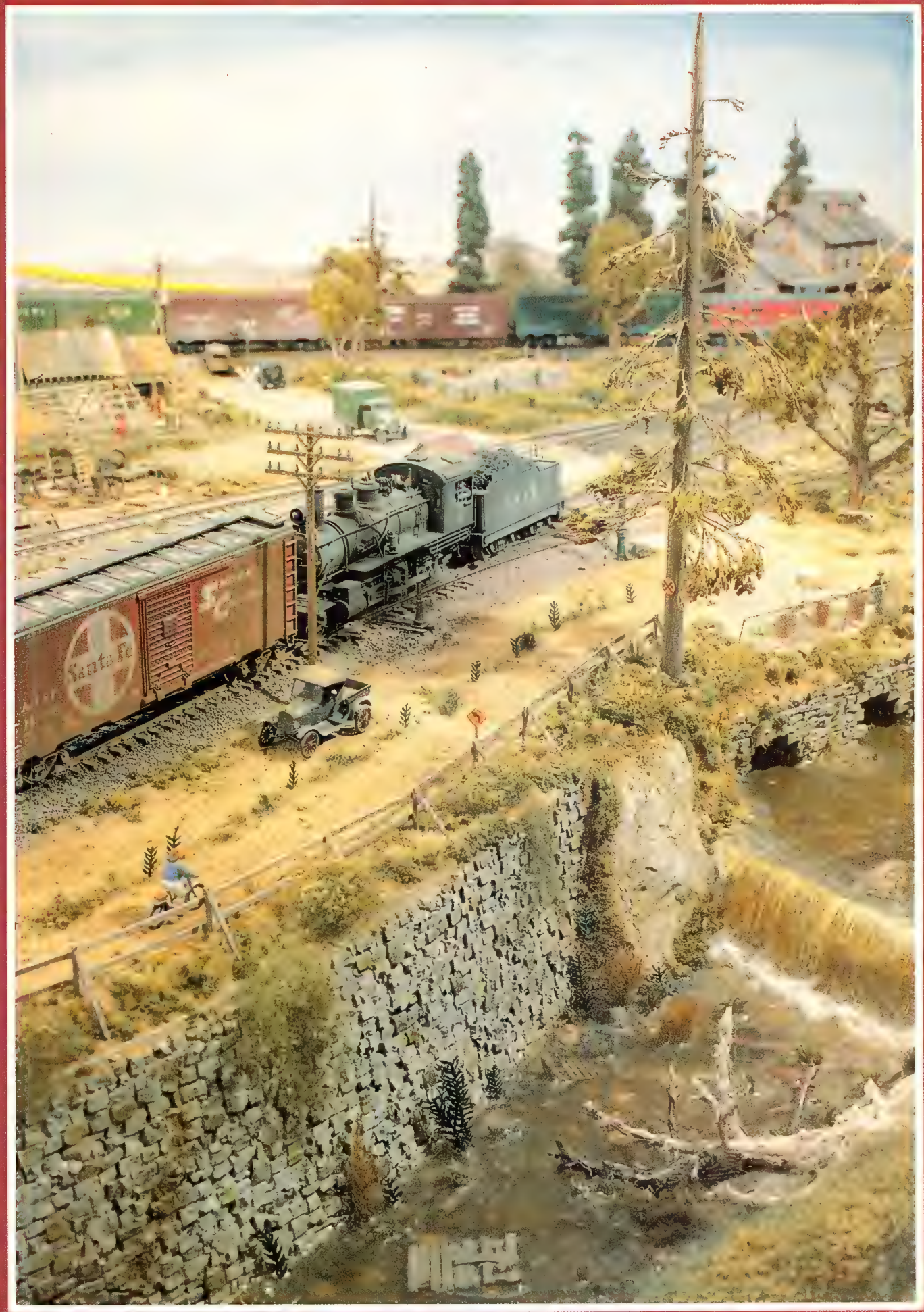
Santa Fe

nal masters for these walls were built-up from individual pieces of stone and then cast in RTV rubber molds. Plaster of Paris was used for all the rock work because I can't seem to get Hydrocal in my area. I colored and weathered all my rock work on the workbench before I installed it on the layout. My "rock" walls were sprayed with light gray paint and sprayed or brushed with a mixture of one pint of ordinary rubbing alcohol and two teaspoons of India ink. When this was dry I applied very thin stains of rust and brown for color variation. Pastel chalks were also dusted on and as a final touch, the "rocks" were dry-brushed with white water based paint. This brought out the highlights and made the "rocks" look real. When I installed the walls on the layout, bits of newspaper were stuffed around the rock work to fill in the open spaces which were then covered with thick plaster.

I used three different textures of light-colored real dirt for my ground cover and sifted it on with a teaspoon or tea strainer (for large areas). Different shades of commercial grass were sprinkled where I wanted grass to grow. Once I was satisfied with an area of ground, I sprayed it with a mixture of one part of Elmer's white glue to three parts of water and a dash of detergent. Then loads of junk, details, and debris were pressed into the still wet dirt. More dirt was sifted over these parts and glued in place with the glue/water/detergent spray. One of the nice things about using real dirt is that you can keep adding dirt and details until the scene looks right. All you have to remember is that the ground dirt darkens with the glue/water spray and lightens up considerably when it dries.

The roads were dry-brushed with still lighter earth colors than the ground to make them stand out more. I also used pastel chalks to add some more ground color variations. The stringy weeds were made from jute twine and macrame cord. I used both commercial and scratch-built trees. My track ballast was added after the ground around the track was completed. My mainline ballast is made up of three parts of Woodland Scenics light gray fine ballast to one part of their buff. Real dirt and N scale Highball cinders were used on the sidings.

Most of the buildings on the scene are from my line of Fine Scale Miniatures kits (sorry, they're all sold out). A few of the buildings are from other commerical kits and a few were scratch-built. All the buildings were heavily weathered because I feel it makes them look more realistic than freshly painted buildings.

The stream bed was made by gluing down real dirt with small rocks and other details. I mixed two drops of Floquil Coach Green into some Envirotex for the water. After the Envirotex hardened I went over the water with Gloss Matte Medium to give it a wavy look. I find that I can renew the gloss by brushing on additional uncolored Envirotex to shine things up.

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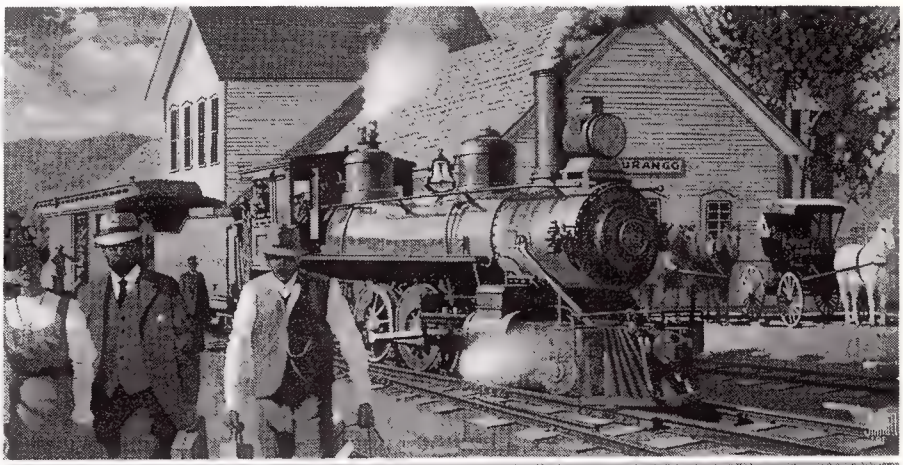

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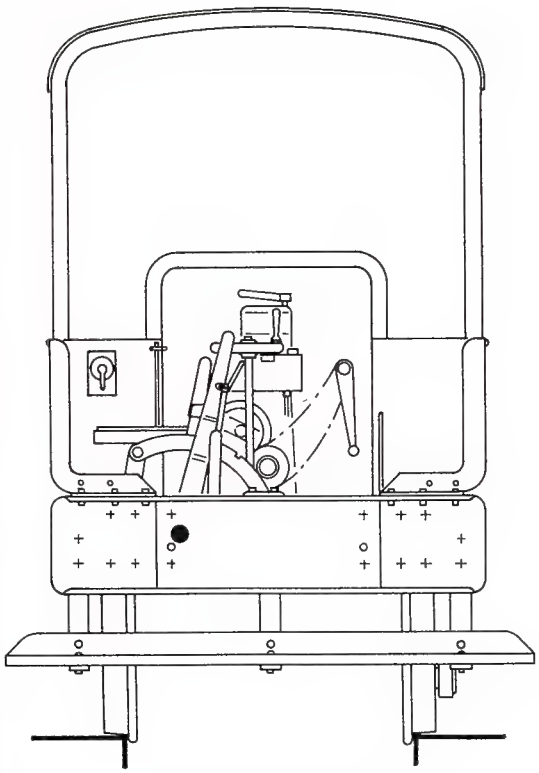
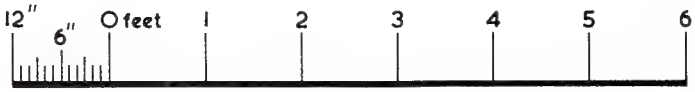


© Stuart L. Baker; 6 May 1987

KILAUEA – IKI (LITTLE KILAUEA) was one of a number of gasoline-powered industrial locomotives of this design built by Baldwin. Used on both narrow and standard gauge lines, these engines were available in gauges ranging from 2 feet, 6 inches to 4 feet 8½ inches. The 3-foot gauge KILAUEA – IKI was built in 1913 for the Hawaiian Agricultural Company where she became their #3 and worked as a switcher.

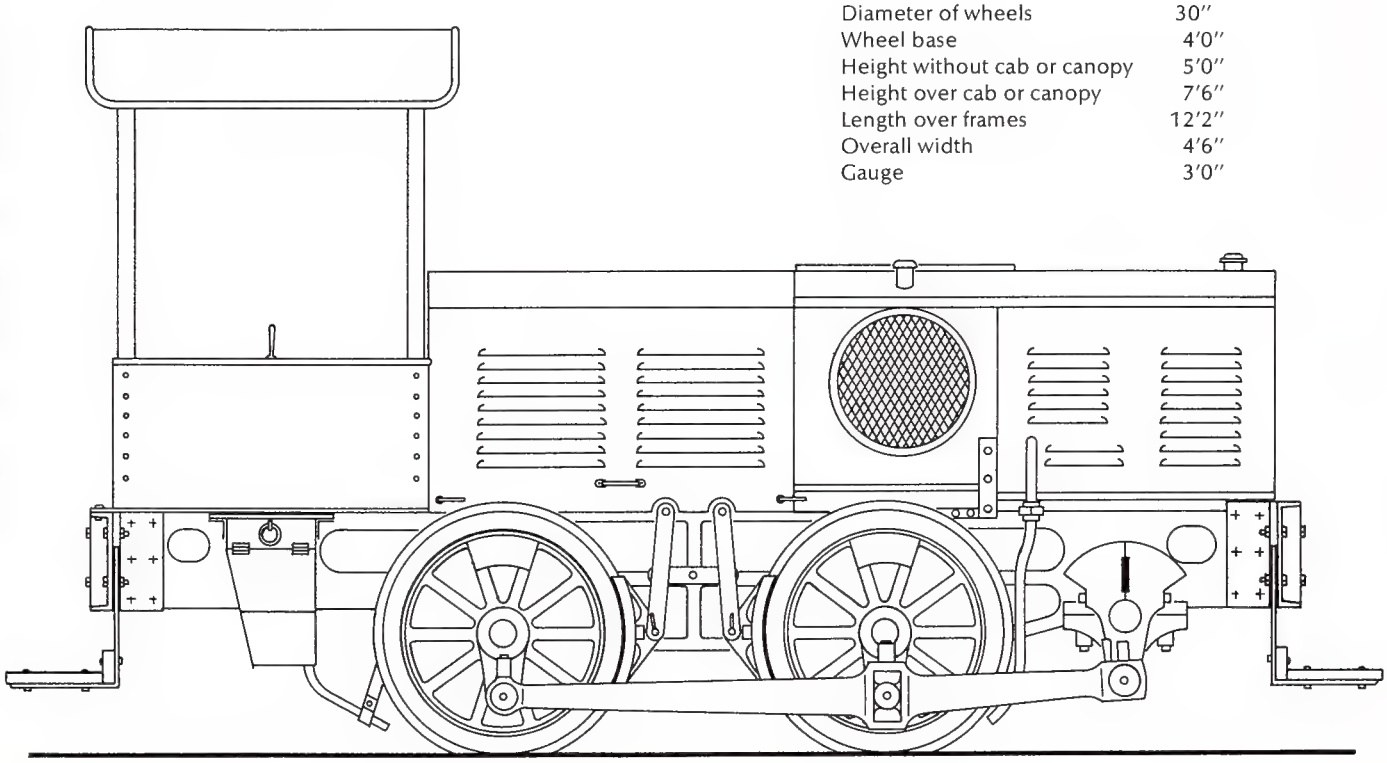
This 7-ton engine had a four-cylinder, four-cycle, water-cooled engine located between her rear wheels. Power was transferred to a two-speed forward and reverse gearbox above the flycranks through a flywheel and clutch between the front wheels. Each side rod had a slight angle where it met the front wheel. There the side rods were resiliently mounted to the crank pins, allowing the front wheels to spring up and down. This design eliminated the need for jointed rods; however, I find it interesting to speculate on just how effective this arrangement was in practice. Baldwin later reverted to a conventional side rod design for similar locomotives built for the American, Russian, and British governments during World War I.

My thanks to Rich Dunn who provided me with a copy of the 1913 Baldwin catalog from which I obtained the information used in making my drawing.



SCALE: ½ INCH = 1 FOOT

Diameter of wheels	30"
Wheel base	4'0"
Height without cab or canopy	5'0"
Height over cab or canopy	7'6"
Length over frames	12'2"
Overall width	4'6"
Gauge	3'0"



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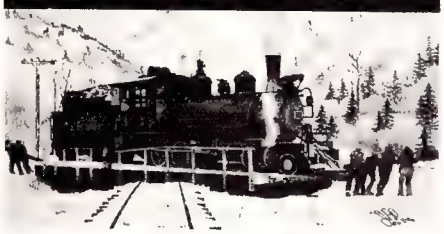

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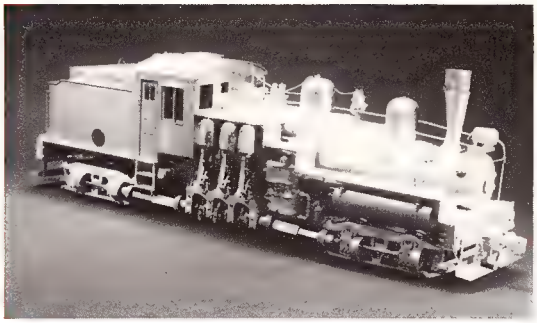

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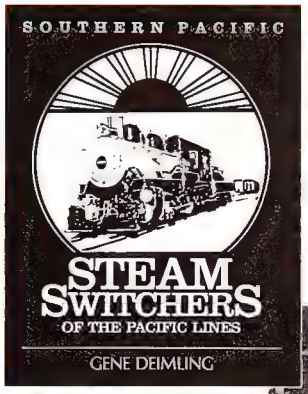

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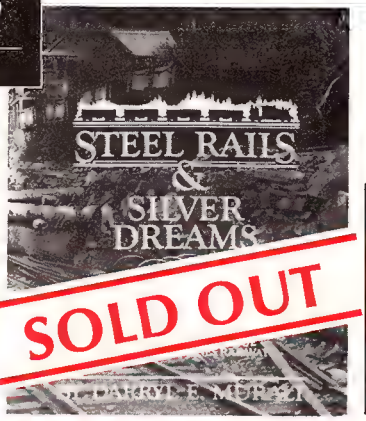

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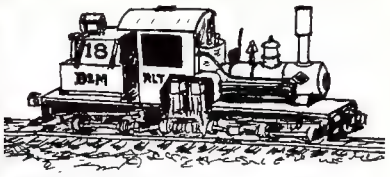

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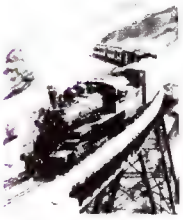

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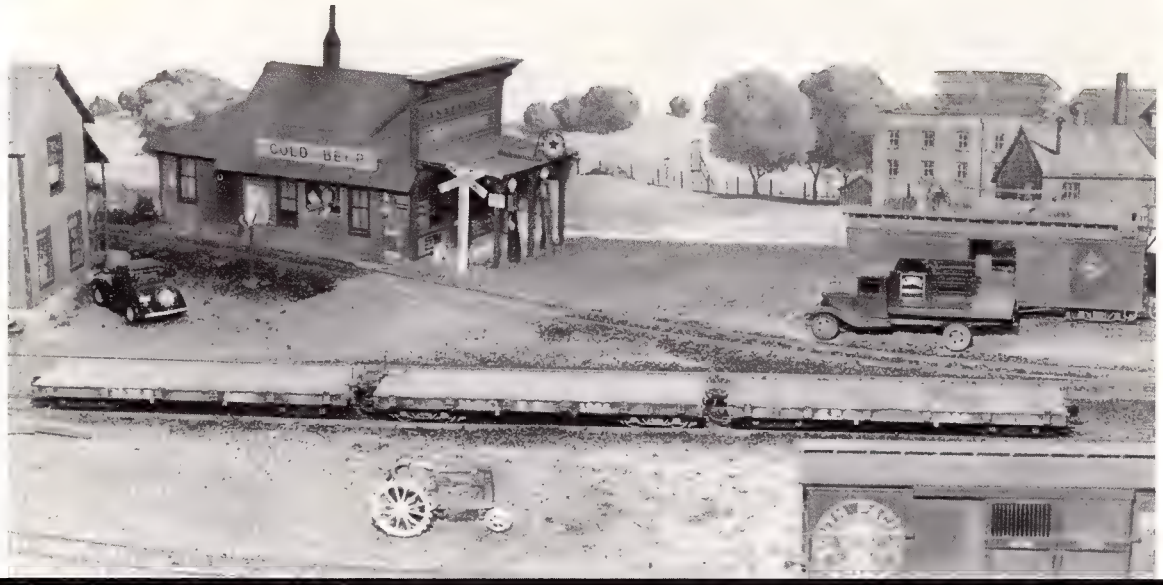


GETTING THEM RUNNING

RELIABLE CARTER BROTHERS FLATCARS IN HOn3

by Jim Vail
Photos by the author

Several years ago, when my HOn3 Glenwood and Black Creek Narrow Gauge Railroad needed some flatcars, I built several with detailed board-by-board underfloors. However, by the time I got enough weight in them to make them operate reliably, my carefully-detailed floors had all but disappeared. These cars were so light that I had to glue weights between the frame sills and cut away the sills to clear the wheels. The next time I needed some flatcars, one of my friends suggested, "Just start with a hunk of metal plate, then build the car around it." So that's what I did for my next string of flatcars.

I chose 28-foot long Carter Brothers' flatcars as the prototype for my next flats. Carter Brothers' freight and passenger cars were widely used in the western U.S.A. on railroads such as the North Pacific Coast, the Pacific Coast, and the Nevada County Narrow Gauge and would be right at home on my Glenwood and Black Creek line. The best plan I have seen for 28-foot Carter flats is on pages 54 and 55 of Bruce McGregor's excellent book, *South Pacific Coast*, published in 1968 by Howell-North Books, Berkeley, California. This book also contains many photos of these cars.

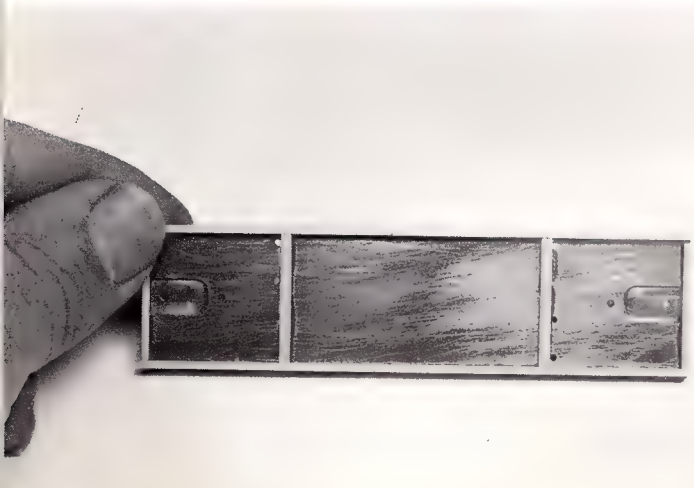
Title Photo: Three of the author's 28-foot Carter Brothers flatcars on his HOn3 Glenwood and Black Creek Narrow Gauge Railroad.

Photo 1. The author's basic 1/16-inch-thick flatcar floor piece here has its side, end, and stop sills glued in place. The grooves for the couplers have been milled into the ends.

Photo 2. One of the author's completed HOn3 Carter Brothers' flatcars ready for weathering.

Following my friend's suggestion, I began construction with a sheet of 1/16-inch thick steel sheared to size, and drilled, tapped, and notched as shown in fig. 1. The coupler areas were milled. Photo 1 shows the steel plate with the side and end sills glued in place with ACC – fig. 2 shows how the sills were mortised to join at the corners just as the prototype Carter sills did. The center sills, and what I call stop sills, were also glued in place. The stop sills are not prototype but they work well as an attachment place for the truss rods and keep the truss rods out of the way of the wheels. At this point in construction, while it was still easy to get the paint down between the sills, I sprayed on a coat of Floquil Boxcar Red.

After the paint had dried, I added the 5-foot, 6-inch-long truss rod beams. They have Grandt Line #5050 queen posts on



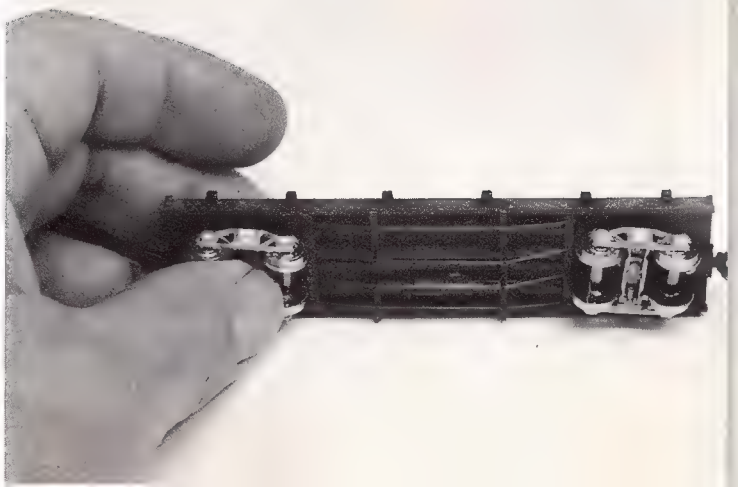


FIGURE 1. CARTER BROTHERS' HOn3 FLATCAR

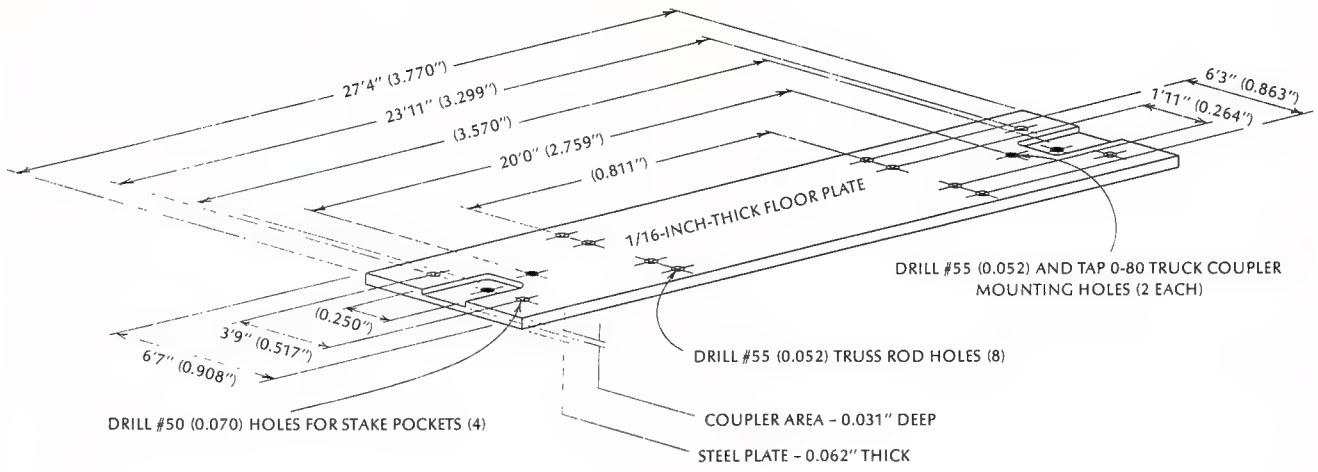


FIGURE 2. CARTER BROTHERS' FLATCAR FRAME

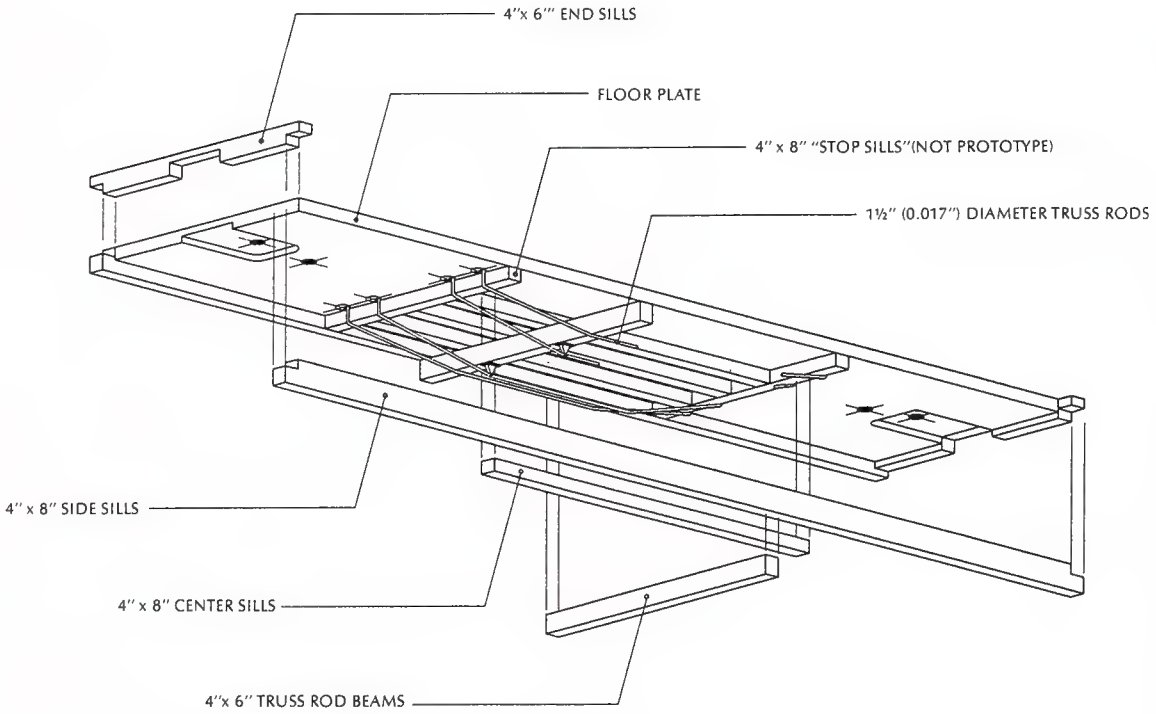

4"x 6"" END SILLS
FLOOR PLATE
4" x 8" "STOP SILLS"(NOT PROTOTYPE)
1½" (0.017") DIAMETER TRUSS RODS
4" x 8" SIDE SILLS
4" x 8" CENTER SILLS
4"x 6" TRUSS ROD BEAMS

FIGURE 3-a. ALTERNATIVE METHOD OF MAKING A CARTER BROTHERS' HOn3 FLATCAR FLOOR PLATE USING TWO PLATES WITH COUPLER AREAS CUT OUT OF ONE

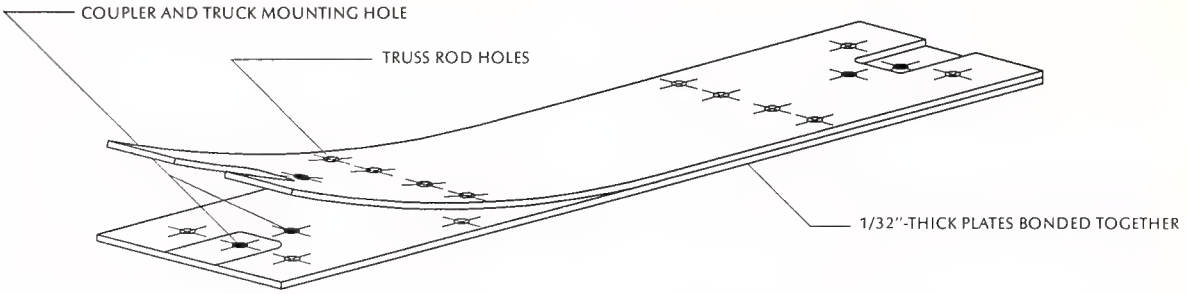
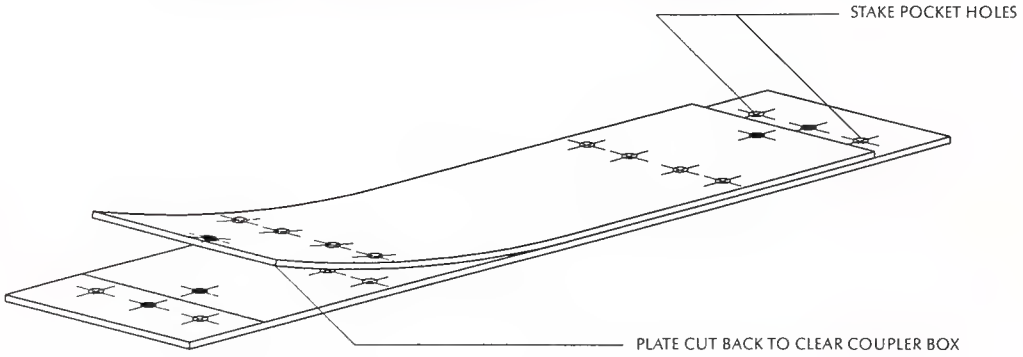


FIGURE 3-b. ANOTHER ALTERNATIVE METHOD OF MAKING A CARTER BROTHERS' HOn3 FLATCAR FLOOR PLATE FROM TWO PLATES, ONE SHORT TO CLEAR COUPLER BOX



the center rods only. The truss rods were made from nylon fishing line and were made of a single piece of line. As shown in fig. 2, it was secured by a knot in one end and then threaded back and forth through the holes and again secured with a knot at the last hole. Since the outside truss rods have no queen posts I had to ACC these truss rods in place. I also ran ACC around the center truss rods at each hole and knot. Carter Brothers' flatcars did not have turnbuckles since the truss rods were tightened up at the end washers on the end sills.

Next the end sills were notched for installation of the Kadee couplers. Each coupler box and truck was held in place with an 0-80 screw that was snipped off and filed flush with the top of the steel plate once everything was in adjustment. The trucks had to be "spaced-up" with washers until the center of each coupler was 0.281-inch above the rail, and the cars had to be test-run and fiddled with until their "bugs" were ironed out.

The Carter flats were originally built without air brakes and had no steps or grab irons, but in their last days some of them did get air brakes and grab irons. I don't know about steps, so you can do whatever you like. Their stake pockets were close to each and were accessible through holes in the deck. However, I have seen photos of these cars without deck holes, so maybe some of the Carter flats never had stake pockets. On my cars, I used Grandt Line, single U-bolt #5012 stake pockets. Grandt Line #5094 elliptical nut-bolt-washer castings were added on the sides above the bolsters and rectangular #5113 nut-bolt-washers were added to the ends. The #5040 Grandt Line brake rigging set contains all the parts you need to detail these flatcars. I used Pacific Traction pre-formed hand grabs on the ends of my flatcars.

After the glue on the nylon truss rod ends was good and dry, the extra that extended above the steel floor was trimmed off flush. Then I removed the trucks and couplers and airbrushed the body and trucks with their final coats of paint.

Once the paint had dried, pre-stained, individual board decking was glued down with ACC glue. When you do this, don't forget to cut in the holes above each stake pocket. Any glue that squeezes through can be scraped off and oversprayed with some clear flat paint. It is important to leave the trucks and couplers off until the deck boards are all glued down, otherwise you could accidentally glue your couplers and trucks together.

I completed my cars by adding some Sloan decals, a brake wheel, ratchet and chain-winder assemblies, some touching up of the paint, a light dusting of chalk, a very light overspray of Floquil Dust and some light scraping and scratching. I have also found that putting some white glue in the truck and coupler screw holes helps keep them in place but allows you to remove the screws when necessary.

The floor piece could be made out of brass which is easier to work and more readily available than steel. If you don't have a milling machine you could build up your floor as shown in figures 3-a and 3-b. The plates could be glued together with ACC.

I used Grandt Line #5110 Denver & Rio Grande Western 3-foot, 7-inch archbar trucks because I happened to have them on hand. Westside Model Company, Precision Scale Company, Rio Grande Models, and Simpson have all produced Carter Brothers trucks in HOn3.

There is a great deal of conflicting information about the Carter Brothers flatcars. My cars were made up after studying all the photos and plans I could find. The dimensions I used are shown in fig. 1 and should work for anyone wanting to build some of these reliable, heavy, little cars. They are not a one-evening project or a "dollar car," but they do beg to be built.

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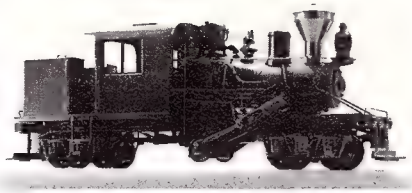

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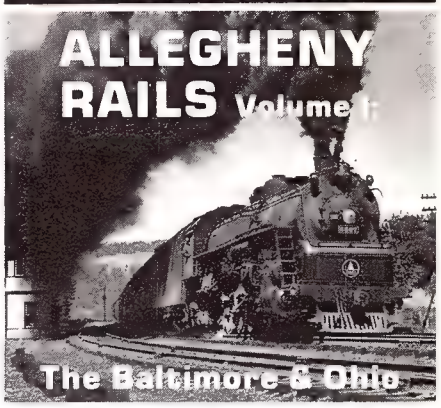

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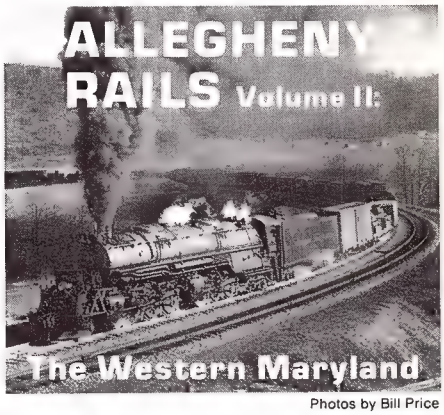

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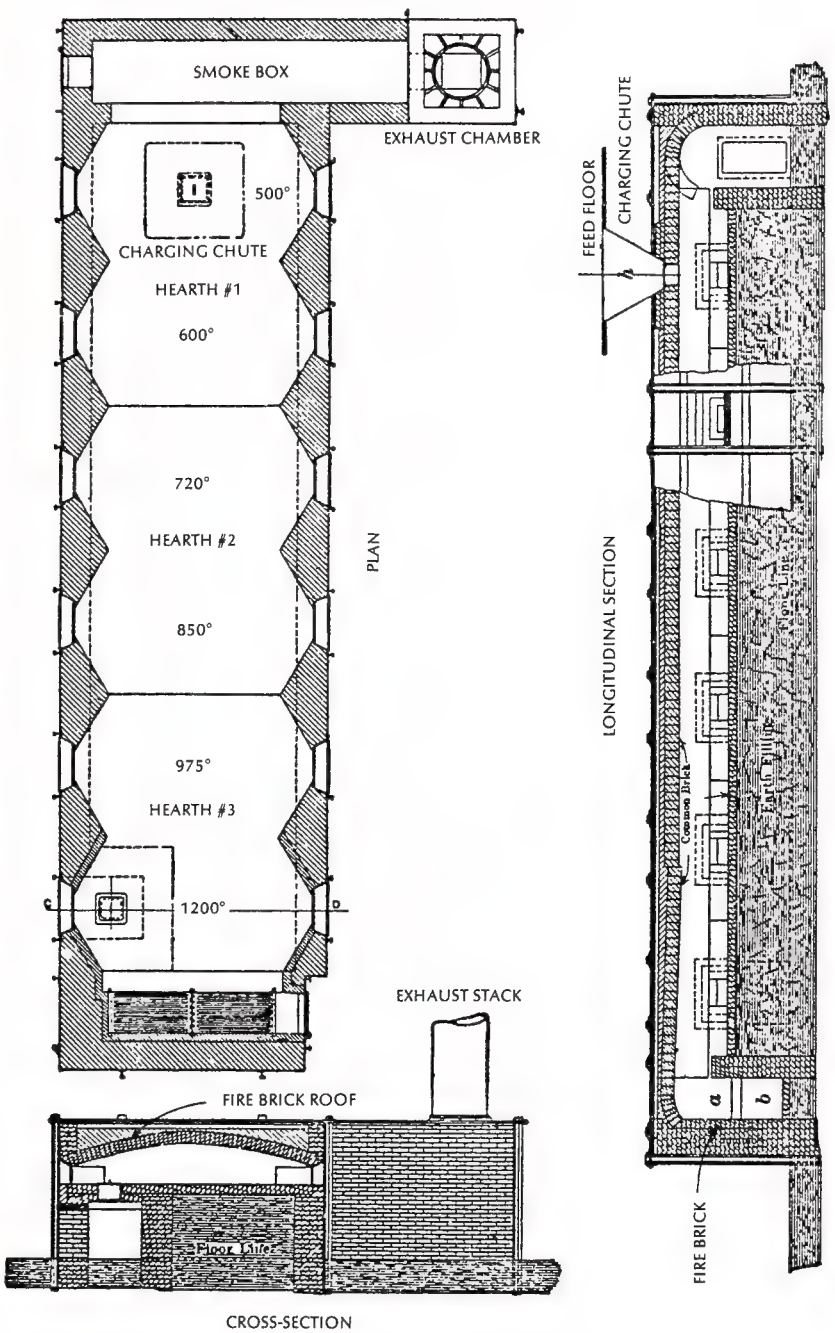
A Smelting Campaign

Part 7: The Reverberatory Furnace

by Lind Wickersham

***Drawing 1.* Plan of a Reverberatory Roasting Furnace**
(from: Austin, Leonard S., *The Metallurgy of the Common Metals*, 5th edition, John Wiley & Sons, Inc., 1921. page 96).



Smelting, the process by which base bullion (lead plus gold and silver) was extracted from ore, was carried out in *campaigns*. The heart of a campaign was one or more blast furnaces such as I have described previously in this series, burning continuously, 24 hours a day, often for several months. But there was another type of furnace important in smelting – the reverberatory furnace, so-called because its heat was reflected back from its roof onto the material treated.

As ore was smelted, base bullion and slag were separated in the blast furnace, and ore had to be continously supplied to keep the process going. Some of the slag from the furnace was crushed and recycled, partly for its usefulness as flux and partly to recapture precious metals not extracted in its first pass through the furnace. A reverberatory furnace was used to break down sulfide compounds in slag and ores by roasting. In this installment I will describe how I built a reverberatory furnace for my HO scale smelter.

Drawing 1 and the photos show the overall design of my reverberatory furnace. I started by making a rectangular box 15 x 48 x 7 scale feet from scale 1-inch thick Plastruct sheet. This box formed the main body of the furnace as shown in drawing 2. A second rectangular box measuring 5 x 10 x 7 scale feet was attached to the first box to form the smoke box/stack exhaust discharge area that shows on the left side of photo 1. A wall was made to fit across the large box to form the smoke box end of the furnace as shown in drawings 1 and 2. Holgate & Reynolds #HO-101 brick material was applied to the outside and inside of the Plastruct boxes, in such a manner that the bricks extended at least 3 feet down the inside of the walls.

The supports for the arched furnace roof were made from five pieces of 0.040-inch-thick styrene cut to the dimensions shown in drawing 3. With these support pieces glued inside the furnace, I was ready to make the arched roof itself from 0.010-inch thick styrene. I covered it with brick material painted fire brick yellow (as described in Part 4 of this series) and glued it in place. The sloping roof that covers the smoke box area was made from 0.030-inch thick styrene, covered with brick material and glued in place.

The floor of the reverberatory furnace extends 5 feet beyond its outside edges and was made from 0.020-inch thick styrene covered with bricks painted a reddish color. I made the vertical furnace stave braces from 3/64-inch Plastruct "T" material and filed the "T" flat at each end as shown in drawing 4. Grandt Line nut/bolt/

Photo 2 (opposite). The author's HO scale reverberatory furnace before it was installed in his smelter. The charging floor was installed over the girders that hold up the charging chute before the model was put in place in the smelter building. *Photo by the author.*

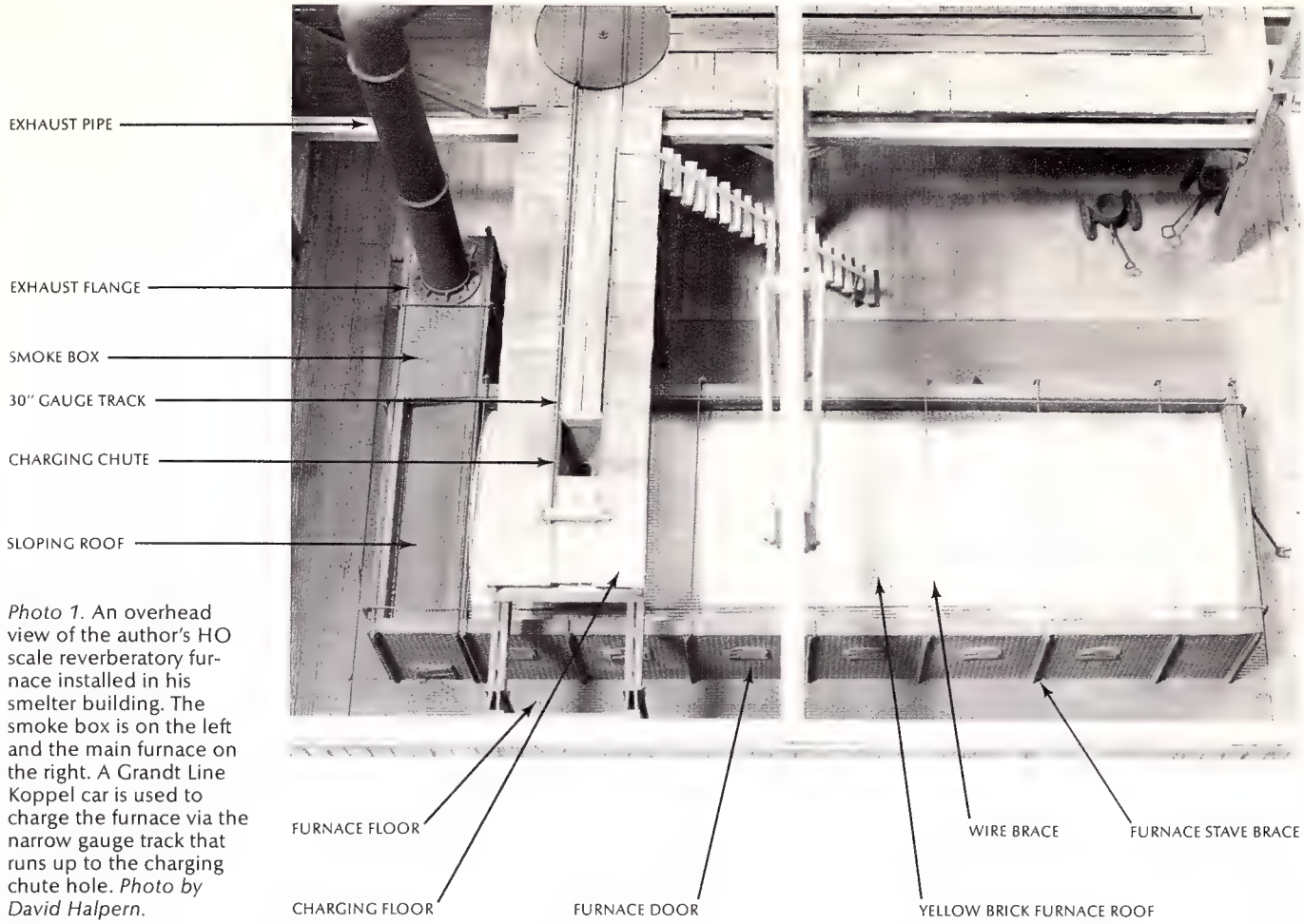
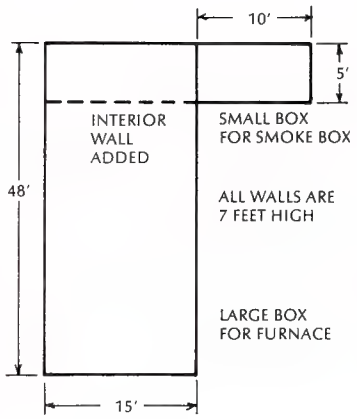
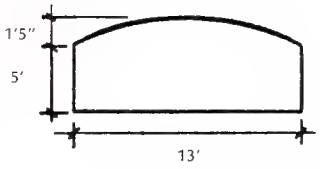


Photo 1. An overhead view of the author's HO scale reverberatory furnace installed in his smelter building. The smoke box is on the left and the main furnace on the right. A Grandt Line Koppel car is used to charge the furnace via the narrow gauge track that runs up to the charging chute hole. *Photo by David Halpern.*

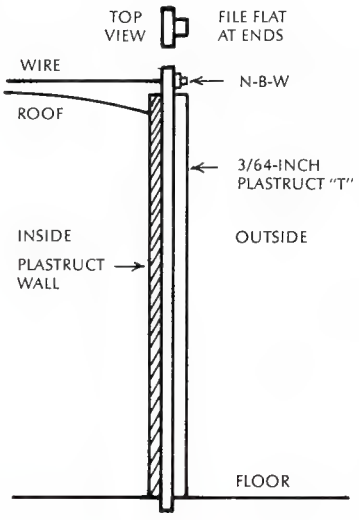
Drawing 2.
The Reverberatory Furnace Walls



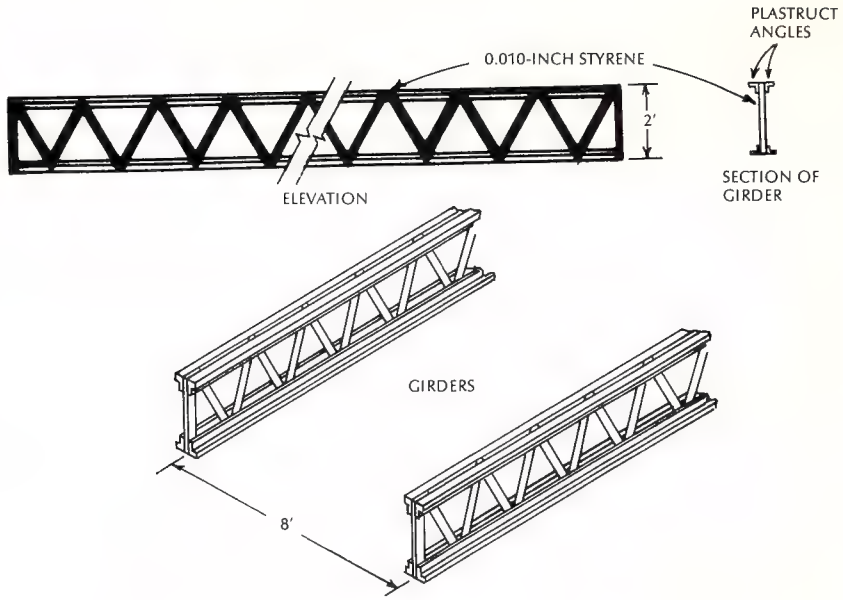
Drawing 3.
The Arched Roof Supports



Drawing 4.
The Stave Braces



Drawing 5.
The Girders



washer castings were added to the top of each of the staves as shown. (There are 25 staves on the furnace, ten on each side of the furnace proper, two on the non-smoke box end, and three on the smoke box end.) The furnace stave braces were glued in place and tied together with some 0.012-inch brass wire painted with Floquil Grimy Black as shown in photo 1.

The furnace doors (see photos 1 and 2) and smoke box clean-out door (photo 2) were made from 0.010-inch styrene with Grandt Line #5095 hinges. Their handles are 0.012-inch wire and they were also painted Grimy Black.

The exhaust pipe flange was made from ⅜-inch diameter Plastruct tubing as described in Part 5 of this series. The funnel-shaped charging chute (drawing 1) is 0.010-inch sheet styrene. You can see the entry to this chute as a rectangular hole in the platform at the left end of the furnace in photo 1.

I built the four steel box girders that hold up the charging floor as described in Part 3. A pair of steel girders 2 feet tall with zig-zag bracing (photo 2 and drawing 5) run between the box girder legs. The height of the box girder legs and steel girders will need to be just enough to place the charging floor at the same height as the doors of the furnaces you are using in your smelter. The exhaust pipe flange, charging chute, and girder system are all Grimy Black. The charging chute is attached to the center of the girder system and to the arched roof as shown in photo 2.

I laid some planks on the girders and put a narrow gauge track down the center of the planks. A Grandt Line Koppel car runs on the track to charge my furnace. The final step was mounting the exhaust flange on the top of the smoke box and running a ⅜-inch diameter Plastruct tube from the furnace back to the main dust chamber described in Part 5.

I will conclude my series on building an HO scale smelter in the next issue by describing the support equipment and overview of the smelter building.

A Smelting Campaign

PART	ISSUE	TITLE
1	**May/June 1987**	***Introduction to Smelting and the Incline Tram***
2	**July/Aug 1987**	***The Material Bins***
3	**Sept/Oct 1987**	***The Furnace Support Structure***
4	**Nov/Dec 1987**	***The Furnace***
5	**Jan/Feb 1988**	***The Crusher and Dust Chamber***
6	**March/April 1988**	***The Old Brick Furnace***
7	**May/June 1988**	***The Reverberatory Furnace***
**8*	**July/Aug 1988**	***Conclusion***

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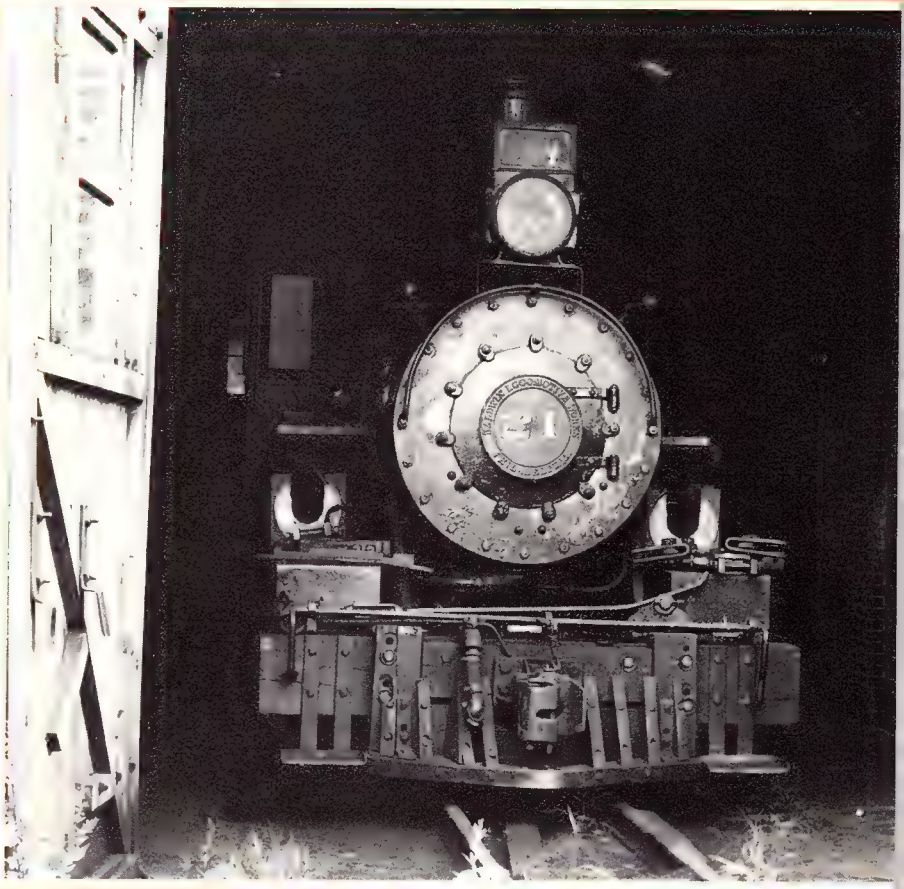
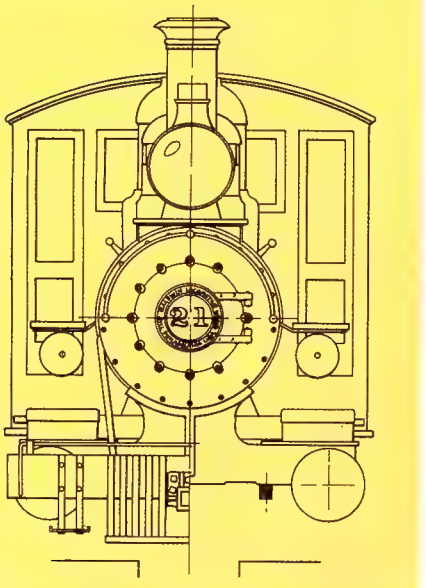
SANDY RIVER & RANGELEY LAKES #21

(Ex-EUSTIS RR #8)

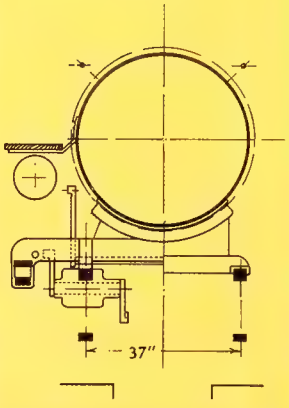
by Ed Gebhardt

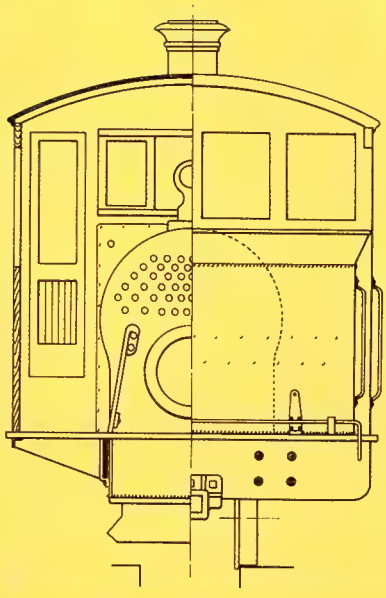
Sandy River & Rangeley Lakes #21 was one of three similar 2-foot gauge 0-4-4 locomotives built by Baldwin for the Eustis Railroad in Maine in 1903 and 1904. They were numbered 7, 8, and 9, had 12- x 16-inch cylinders, 33-inch diameter drivers, and weighed in at 57,950 pounds each. The engines became Sandy River & Rangeley Lakes' numbers 20, 21, and 22. According to Linwood Moody on page 203 of his book, *The Maine Two-Footers* (Howell-North, Berkeley, 1959) SR&RL #20 (ex-Eustis #7) was retired sometime between 1920 and 1922. Apparently, however, she was not scrapped until the railroad shut down in 1935. At that time she and her sisters SR&RL numbers 21 and 22 (ex-Eustis 8 and 9) were also cut-up. My drawing shows #21 as she was just before retirement. When she was built she had no engine brakes, only hand brakes on her rear truck. Air brakes, a sheeted-in cab, and electric headlights were added during her years on the Sandy River. My drawing is based on photos and Baldwin erecting card #4595 obtained from the builder many years ago.

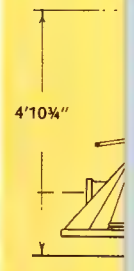


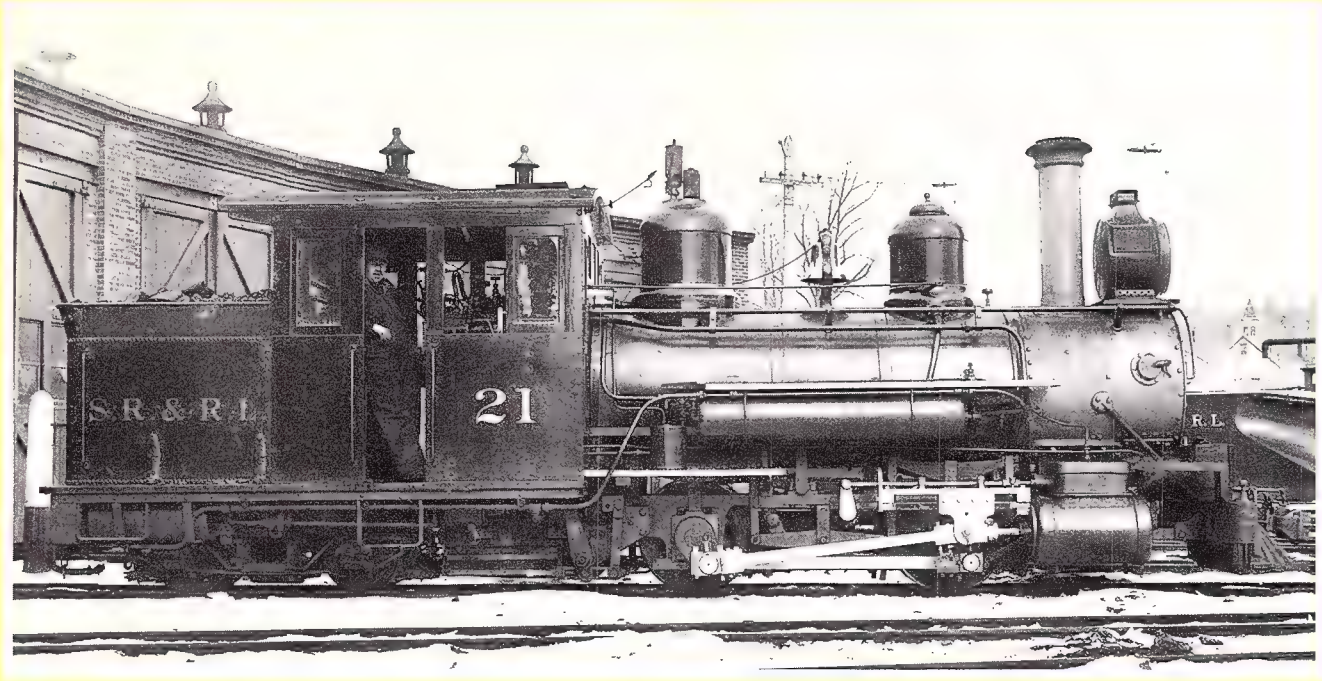


SCALE: ¼ INCH = 1 FOOT



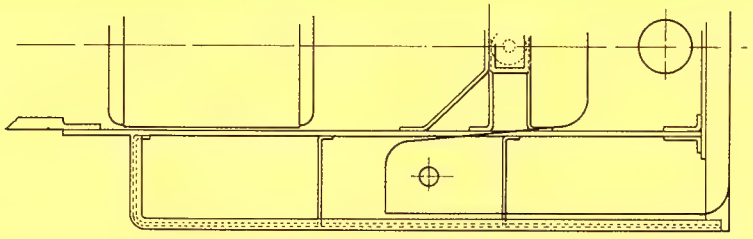


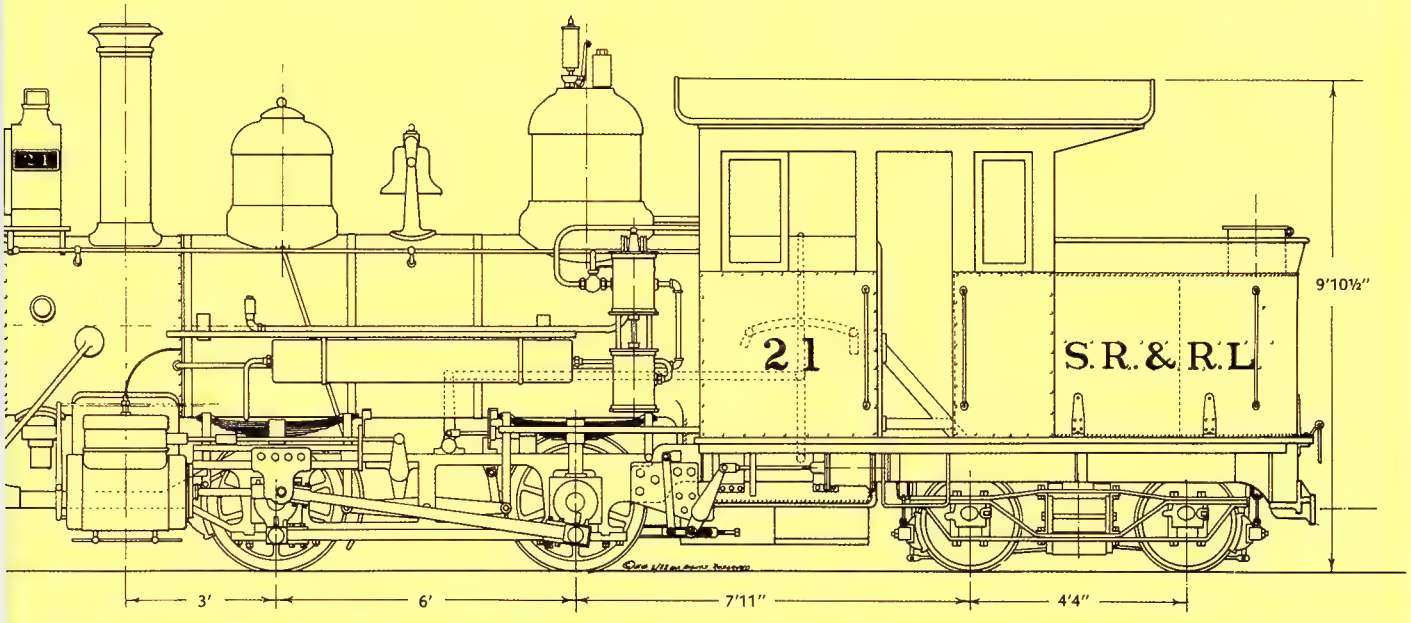




Sandy River & Rangeley Lakes #21 (ex-Eustis #8) at Phillips, Maine, in 1920. *Photo, collection of Ed Bond.*

Opposite:
Sandy River & Rangeley Lakes – #21 (ex-Eustis #8) peeking out of the Phillips roundhouse in 1932. *Photo, collection of L.B. Walker.*





A KIT-BASHED ROTARY SNOWPLOW

by Bob Boudreau
Photos by the author

A long time ago, on a mythical railroad, Superintendent Leroy mused to Shop Foreman, Eugene.

"Sure was a hard winter. Glad it's over," said Leroy.

"Yep," said Eugene.

"I don't know if we can survive another bad one like that, with all the snow jams we've had," noted Leroy.

"Yep," said Eugene.

"Wish we could afford one of those newfangled rotary snowplows. Our push plows just can't handle the heavy drifts," complained Leroy.

"Yep," answered Eugene.

"I could buy the remains of that rotary that blew up down Bradford way. I hear the boiler exploded but the rest is o.k.," mused Leroy.

"Umm." answered Eugene.

"Spose you could use our ol' number 76 engine as a power source?" asked Leroy.

Eugene perked up and exclaimed, "I'll see. Gimme a little time."

Eugene was a man of few words but lots of ideas – the results of his tinkering are shown in the photos. He mounted the boiler and cab from "ol' number 76" on a flatcar with the cylinders facing the front so they could operate the plow. A surplus tender was hooked up to handle the coal supply and the winter snows no longer worried Leroy.

The idea for my model plow came from a photo of an ancient locomotive converted to a snowplow on page 105 of *Logging Railroads of the West* by Kramer Adams, (Superior Publishing Co., Seattle, 1961). The basic parts came from a Model Die Casting/Roundhouse #1515 rotary plow kit and from their #1550 "static steam," a kit for an unpowered HOn3 locomotive. The actual rotary plow and housing on my model are from an Athern plow.

The coal bunker and air tanks were removed from the Roundhouse #1550 and scale 12- x 12-inch timbers were put under the walkways to fill in the gap under the boiler where the air tanks had been. The cab extensions were cut from scribed styrene.

The plow mechanism shelter was cut out of scribed styrene and furnished with stripwood doors and windows and a shim brass machinery access door. The roof is thin cardboard covered with facial tissue held in place with Floquil Weathered Black paint. The boiler and plow shelter ride on the floor and underframe of a discarded boxcar that was extended to accomodate their length.

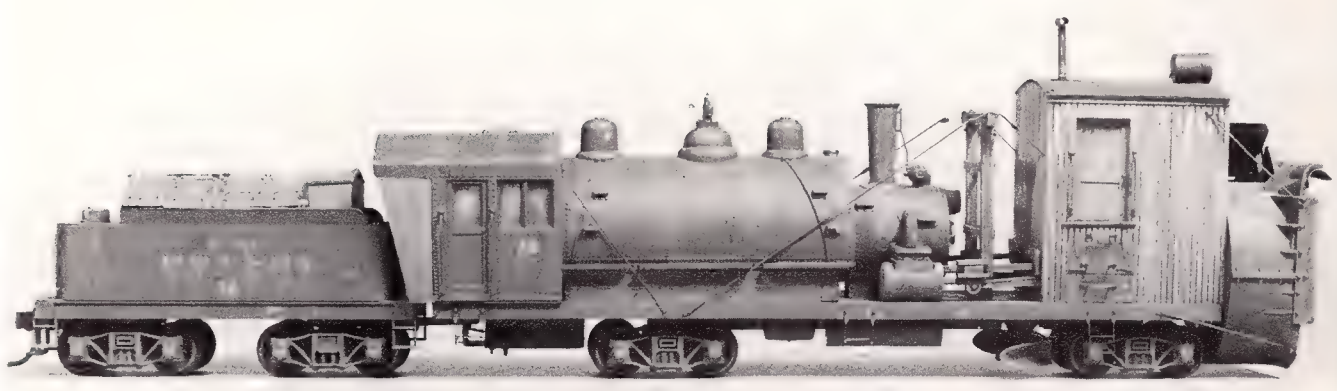
The steps, grab irons, and support rods for the plow housing were made from brass with the ends flattened and nut/bolt/washers added. The smoke jack was drilled out and the headlight has an M.V. Products lens. I cut off the cast-on grab irons and some of the bottom braces on the housing of the Athern plow and extended its sides and the curved deflector on top of the housing with shim brass.

A brass pop valve and whistle were added to the steam dome and the whistle was connected to the cab with a piece of fine wire from a discarded transistor radio. A large styrene box was placed under the cab to represent the firebox and an airtank was added. The flanger blades from the Athern rotary were added.

I sprayed the steam engine and other non-wood parts with Floquil Weathered Black with a little Graphite added. Details were accentuated with a little dry-brushing with Rust. The lettering was done with C-D-S dry transfers – the streaks below the letters are dry-brushed white paint. Finally, the entire model was lightly oversprayed with Floquil Grimy Black.

Now, Eugene, Leroy, and the crew of my HO gauge Fundy Northern Railroad will be ready for next winter's snows with this prototype "kit-bash" copied in model form.

As Eugene would say, "Yep."



THE HULL OAKES LUMBER COMPANY

by Harry Bonham
Photos by the author

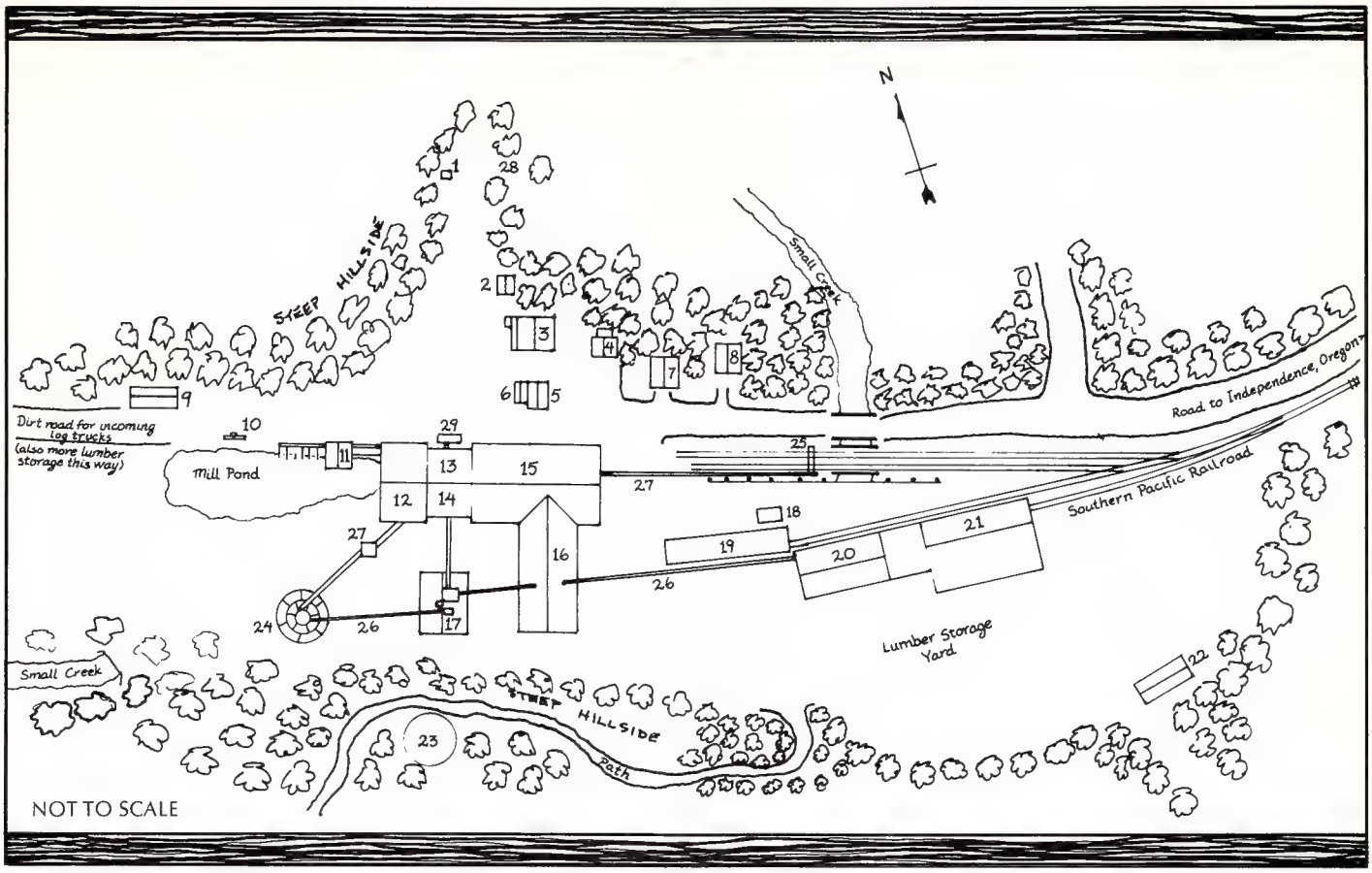
Walking through the Hull Oakes mill, at Dawson Milepost on the Southern Pacific's branch near Corvallis, Oregon, is like taking a stroll back through the 1930s. From the outside, Hull Oakes could be any contemporary mill in Oregon – the green chain, the log pond, and the modern SP bulkhead flats are pretty much what you see at any other Oregon mill today. But once inside the buildings, you know it's different – drive-belts run from steam engines to the heart of the sawing operations. The mill-head rig, the edger, and the carriage and cradle are all activated by this "power of the past." But if you look a little closer, you'll find it's not all steam power. In a concession to modern times, everything else (including the conveyers and winches that move lumber around the mill) is powered by electricity. Being an on-going business, this wonderful mill is not open to the public. It was on the list of tours at the 1987 NMRA Convention in Eugene, so some of you may have visited it then. For those who didn't and those who did and still want more information, here is a brief history, and a plan and photos of this large and complex mill.

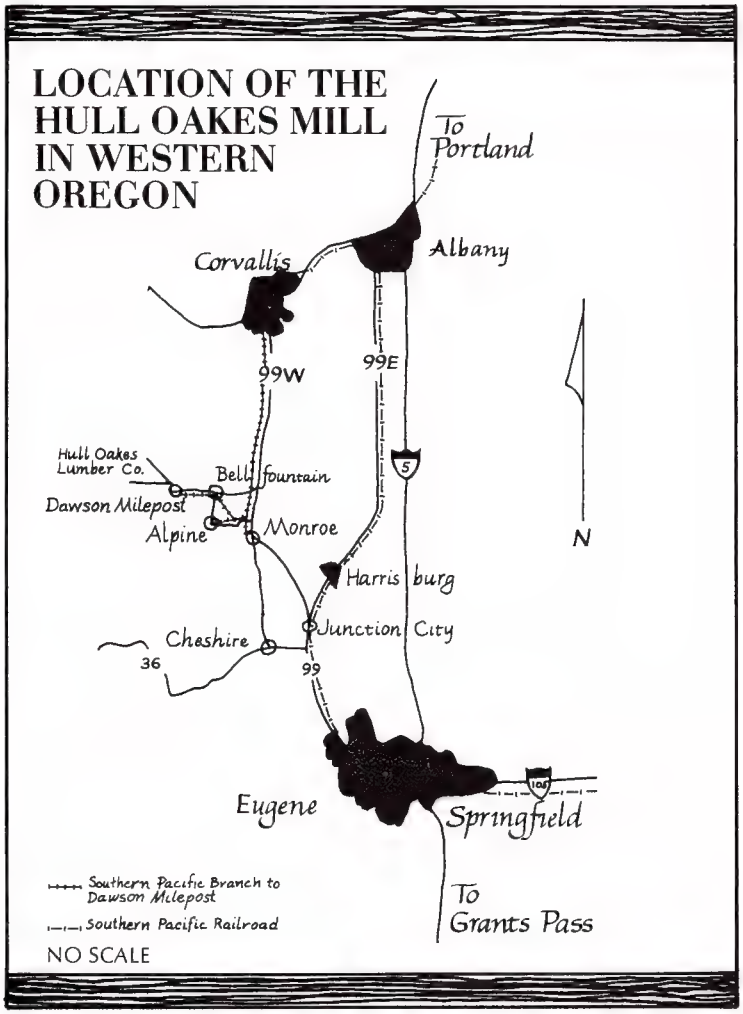
Between 1910 and 1920 the area that was to become the site of the Hull Oakes Mill saw an interchange between the Southern Pacific and the Corvallis Logging Company Railroad. The logging company had about 40 miles of standard gauge track in the woods between Bellfountain and Corvallis, Oregon. According to photos in the Hull Oakes company files dated 1919, one of the Corvallis Logging Company locomotives was a large Climax with a diamond stack and a small spark arrestor.

Title photo: The two smoke stacks in the center of this photo rise from the boilers of the Hull Oakes Mill. The barker is in the building on the far left and the steam-powered sawing operations are carried out in the buildings in the center from which plumes of steams are rising. The mill office and a repair shed are in the right background. This Oregon mill still marks the beginning and ending of work shifts with blasts from its steam whistle.

Ralph Hull began operations at this site in the winter of 1938-39 after purchasing the property from his uncle, Wes Miller. When Wes' mill burned down in 1936 he decided not to rebuild it for economic reasons. Ralph Hull equipped his new mill with machinery from the Hammond Lumber Company's mill at Mill City, Oregon, and with equipment saved when his own mill in Monroe, Oregon, burned in 1935. The steam engines installed were made by the Ames Iron Works some time after the turn of the century.

After World War II when other mills were converting to all-electric or fuel oil-powered operations, the owners of the Hull Oakes mill made what turned out to be a shrewd business decision and chose to keep their steam-powered saws. Hard hit by recessions and particularly by the high price of fuel oil, many of the other mills have fallen into the red and shut down – but the Hull Oakes mill continues to prosper. In today's market, the company saves an estimated $5000 per month by its use of steam. This not inconsiderable amount is



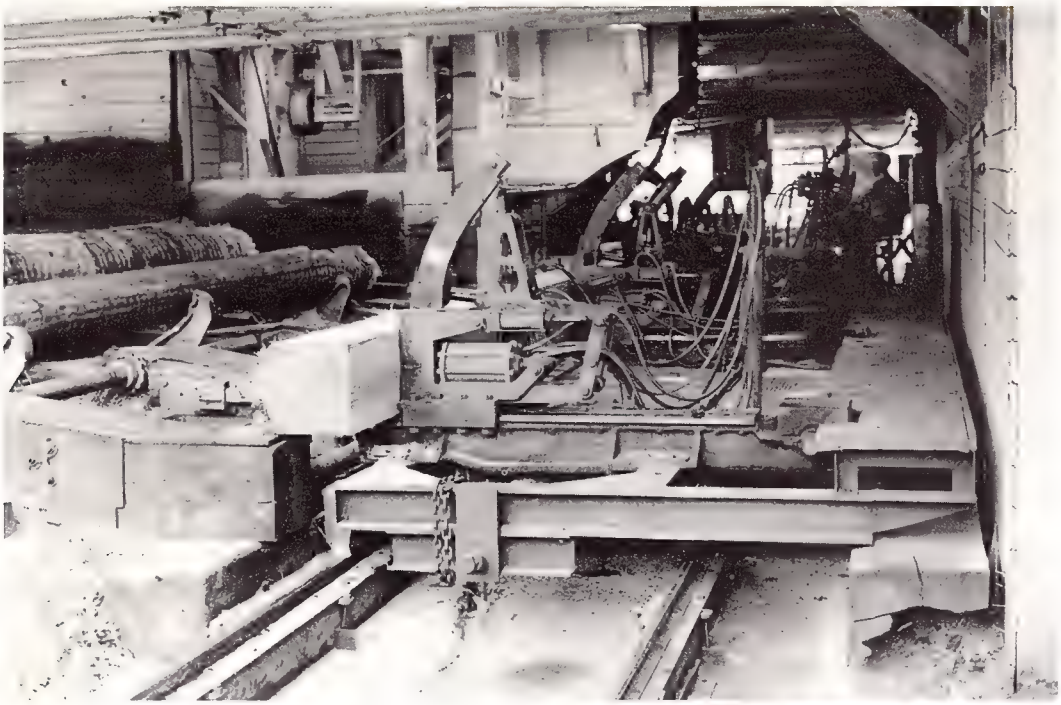


THE HULL OAKS MILL

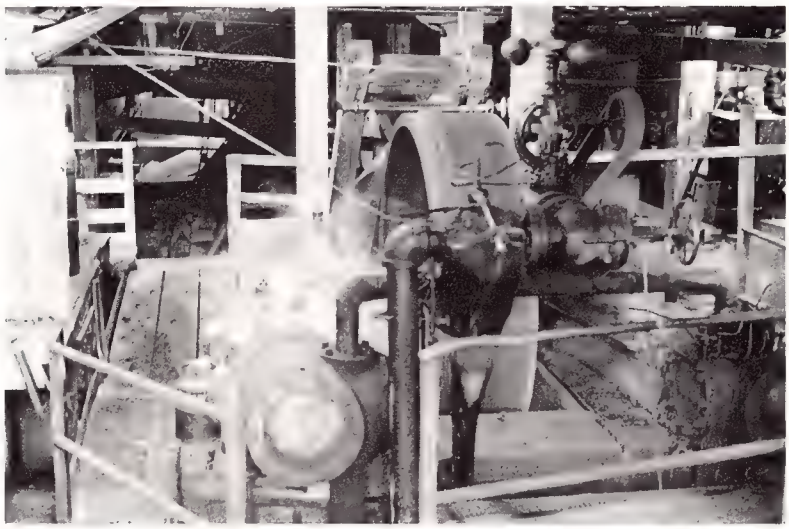
BY HARRY BONHAM

LEGEND

1. EXPLOSIVES SHED
2. EQUIPMENT STORAGE
3. REPAIR SHED
4. COMPANY OFFICE
5. MILL OFFICE
6. LUBRICANT STORAGE
7. GARAGE
8. PRIVATE HOME
9. EQUIPMENT STORAGE
10. A-FRAME
11. BARKER
12. CRADLE, CARRIAGE, AND MILL HEAD RIG
13. SAWYER'S SHOP
14. EDGER
15. CUTTING SAWS
16. GREEN CHAIN
17. BOILER ROOM AND CYCLONE (CREATES VACUUM TO REMOVE CHIPS FROM SAW AREAS)
18. SHIPPING OFFICE
19. RAIL SHIPMENT SHED
20. SAWING OPERATION
21. RAIL AND TRUCK SHIPMENT SHED
22. STORAGE SHED
23. WATER TANK
24. SLASH BURNER
25. RAIL CAR CHIP LOADER
26. CONDUIT FOR CYCLONE
27. CONVEYOR
28. EQUIPMENT GRAVEYARD
29. CHIP LOADER FOR TRUCKS
30. LOCATION OF THE HULL OAKES MILL IN WESTERN OREGON

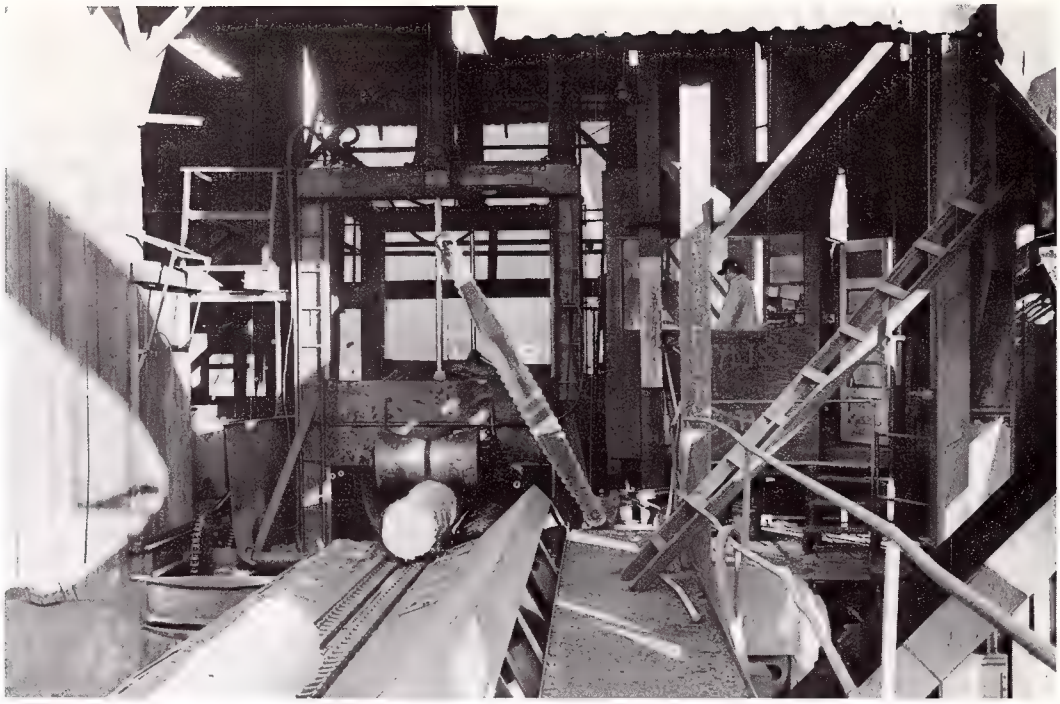


One end of the carriage. Logs are locked onto this device and carried across the edge of the saw blade to be cut into lumber. The steam-powered cradle is on the left.



This single-piston steam engine is at the heart of the Hull Oakes Mill. It operates the belts driving the various machines that cut the logs into lumber.

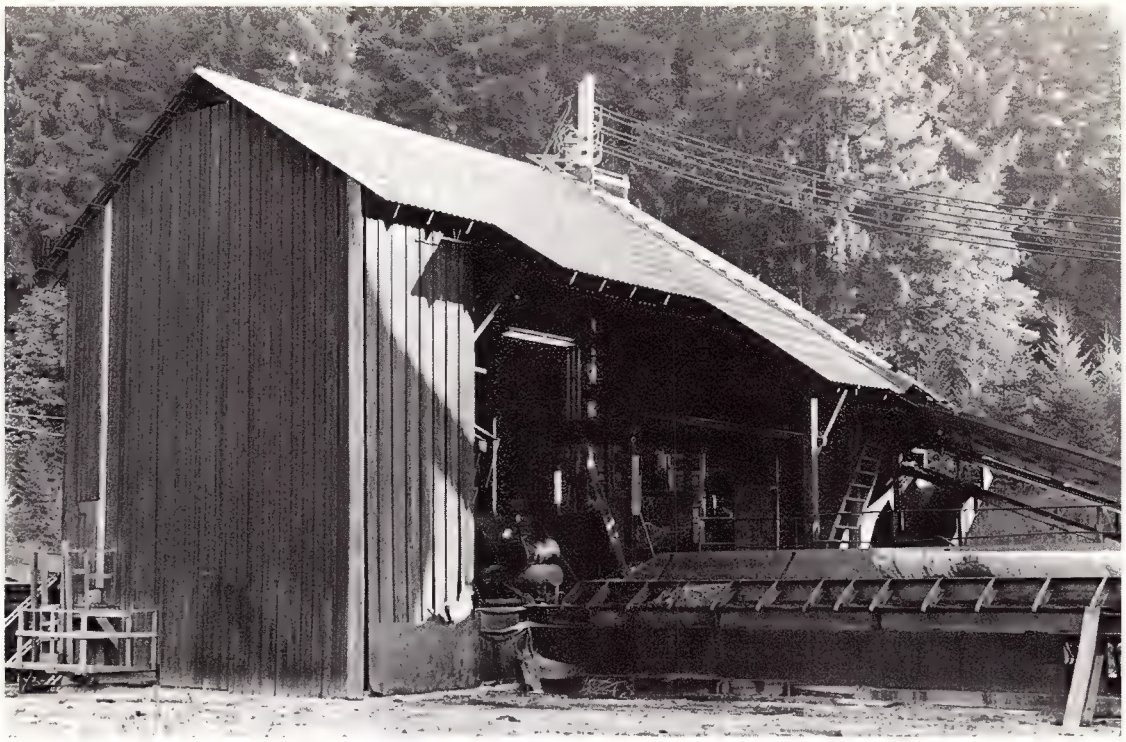
The carriage operator is on the left. His experience and skill can make or break a mill since he is the one who decides how each log is cut. Considerable skill is involved in maximizing the amount of lumber obtained from each log. Here the steam-powered carriage moves the log across the mill-head rig while the operator on the right gets ready to control the board as it falls from the log.



Here a log enters the barker where large saw blades knock the bark off logs before they move on to the saws.

The old Hull Oakes slash burner is used to store, not burn, the mill's slash and sawdust. This "waste" is burned as fuel in the mill's boilers, saving the company an estimated $5000 per month. It is also sold as heating fuel, providing an important source of revenue to the company.

These logs have moved from the barker by conveyor to the mill-head rig where they are waiting their turn to be sawn into lumber. The steam-powered cradle is on the right.



The outside of the building that houses the electrically-powered barker at the Hull Oakes Mill in Oregon.

This A-frame is powered by a motor in the shed at its base and is used to unload log trucks as they arrive at the Hull Oakes Mill in Oregon. The rail in the foreground is part of the Southern Pacific Railroad that once served a now defunct mill nearby. The track was just covered with earth where crossings were needed.

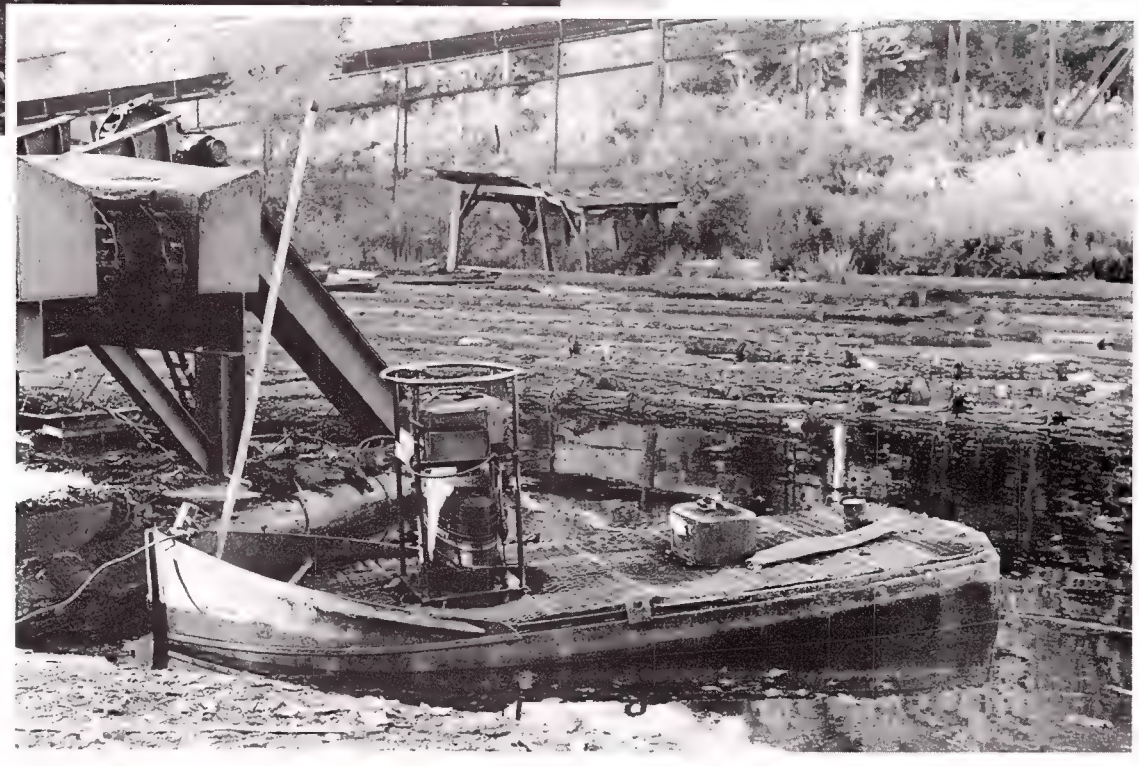
Opposite top:
Logs are pulled from the Hull Oakes mill pond and taken into the barker by the electrically operated conveyor system in the center of this photo.

Opposite bottom:
This Hull Oakes mill pond boat is used to sort out logs in the pond and push them to the landing where they are drawn into the mill. It is powered by a Mercury outboard motor.

saved by fueling its two boilers with shavings, sawdust, and other "wastes" from its own operations.

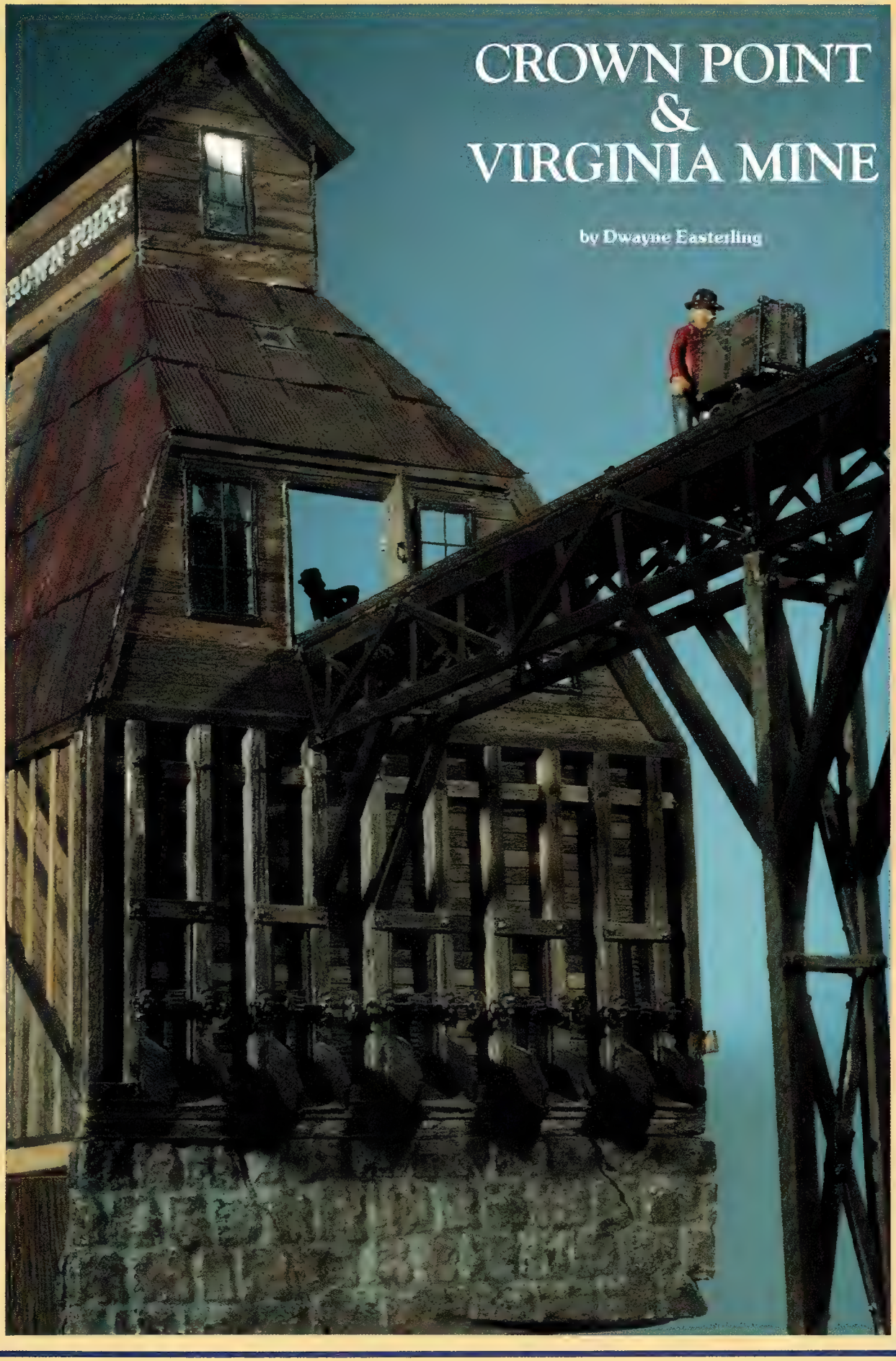
The Hull Oakes Mill's first contracts, in the 1930s, were for production of long timbers such as 2x10's that were 26 to 32 feet long or longer. These timbers were sold for the then handsome price of $10.50 per thousand board feet, primarily to buyers in the midwest. Timbers between 26 and 32 feet long had to be shipped in railroad cars originally designed to haul automobiles because these cars had staggered doors that allowed the long pieces to be loaded. Timbers longer than 32 feet were shipped in end-loading boxcars. The mill could routinely produce lumber of these lengths because tall original growth trees were the norm in Oregon in those days. Today trees of such heights are rare. Nevertheless, the Hull Oakes Mill is apparently one of the few mills left capable of handling large diameter logs 60 feet or more in length. The mill has produced large structural 12x12's 85 feet or longer, and even a few record-setting beams up to 110 feet in length.

Today logs are delivered to the mill on company-owned trucks. The finished lumber and other products are shipped out on the Southern Pacific or on trucks – about 50 percent by rail and 50 percent by truck. The company marks the beginning and end of each day's work with a blast from a steam whistle powered by the old boilers that still provide a substantial 150 pounds per square inch of pressure. As long as steam remains a competitive form of power, the sound of the whistle and plumes of steam will fill the little valley where the Hull Oakes Mill stands – its very existence a powerful argument that at least some steam power was discarded too soon.



CROWN POINT & VIRGINIA MINE

by Dwayne Easterling



"It's a classic," ran through my mind the first time I saw Joe Crea's plans for the Crown Point & Virginia Mine. I was thumbing through *Structures of the Early West* by Joe Crea and Elwood Bell (MEGA Publications, Northglenn, Colorado, 1975) looking for a building that really typified western mining architecture. The Crown Point & Virginia Mine looked as though its builders had my layout in mind when they designed it – the roof angles and lines were perfect for a model.

The Prototype

Researching this mine was almost as interesting as modeling it. It seems that "Crown Point" was a very popular name for Colorado mines. The Western History Department of the Denver Public Library has a stack of reference cards half-an-inch thick under "Crown Point" – nearly every western mining district had a mine by that name. My Crown Point & Virginia prototype was located high above Idaho Springs, Colorado, near the small town of Russell Gulch.

Gold was originally discovered at the Crown Point site in the late 1870s and by October, 1880, the mine head and ore bins were in place. A list of mines of the Clear Creek region compiled in the 1930s states that the Crown Point & Virginia Mine was tenth in the top eighteen producing mines of the region. It straddled the Knickerbocker Vein – ballyhooed as the mother lode of the district. Over half a million dollars in gold was taken from this mine as well as some silver and copper. A nearby mine not so favorably located produced only ninety-two thousand dollars worth of gold in the same period.

Sometime around 1920 the Crown Point was closed down temporarily because acid water had flooded its depths. Eventually the mine was drained by a new bore, a thousand feet lower down, originating at the Big Five Tunnel near Idaho Springs. By February, 1931, the owners were ready to reopen the mine. They printed a 36-page, three- by four-inch prospectus praising the investment opportunities of their mine. A copy of this prospectus remains in the Western History Department of the Denver Public Library where an inspection of it reveals that one of the owners' big "selling points" was that the mine was close to the 2-foot gauge Gilpin Gold Tram. We know today that the Gilpin tracks never reached the Crown Point and that all the Crown Point ore was hauled down to Idaho Springs in mule-drawn wagons. But according to local historian and railfan, Bob Stull, the Gilpin's rails could have reached the mine – there just wasn't enough ore to require rail service. More relevant is the fact that the authors of the prospectus somehow "forgot" to mention that by February, 1931, the Gilpin Gold Tram had already been abandoned for fourteen years.

Nevertheless, enough investors believed the prospectus and invested and the mine was reopened. At this time the large rear portion of the building was built, the original head frame was covered with tar paper, and the new addition was covered with corrugated metal siding. The original power had come from an eighty h.p. boiler and a fifty h.p. steam engine, both probably housed in a small stone building located behind the main mine structure. Electricity was used in the mine's last years and Bob Stull has a photo taken in the late 1950s showing an elaborate power pole standing behind the building.

Opposite and below: The HO scale Crown Point and Virginia Mine. *Photos by the author.*

The Crown Point & Virginia Mine, not far from Idaho Springs, Colorado, had been long abandoned when Bob Stull took this photo in 1957. Note the tar paper on the original head frame on the left and and the corrugated metal siding on the 1930s addition on the right. *Photo by Bob Stull.*

This side view of the Crown Point & Virginia Mine shows the remains of the spindly trestle that led to the tailings dump. Although the prototype mine used mule-drawn wagons to haul out its ore, the mine was large enough to be served by a small railroad. *Photo by Bob Stull.*

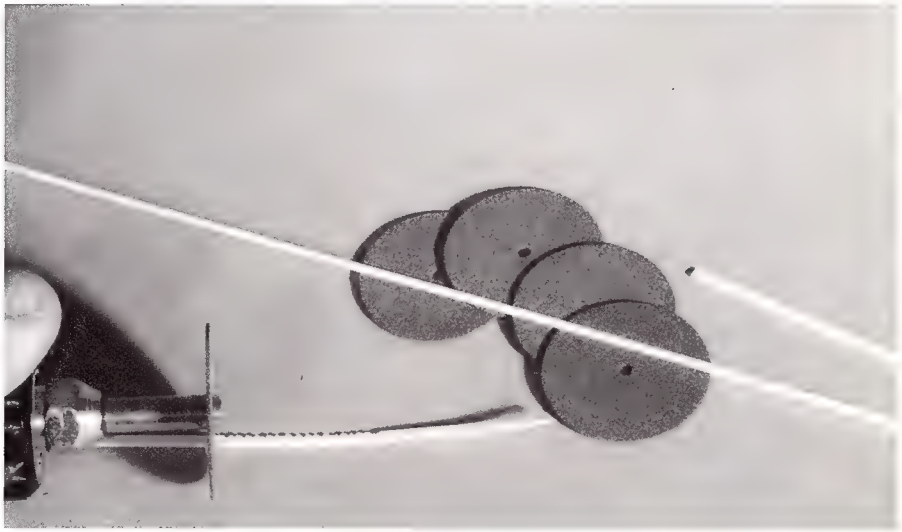
The Model

The plans for the Crown Point & Virginia Mine in the book by Crea and Bell show the building in 1966, one year before vandals burned it down. I wanted more interior details than are shown so I planned a complete interior based on photos of similar mines. A removable side was designed so that this interior can be seen. My mine will be at the edge of my layout so I can continue the mine down under the benchwork to show a cutaway of a mountain complete with the shafts and stopes of the tunnels by boring holes in chunks of styrofoam "bedrock." I decided to remove one wing of the building so it would fit the edge of the layout and to leave off the corrugated siding and tar paper so the wood walls of the building can be seen.

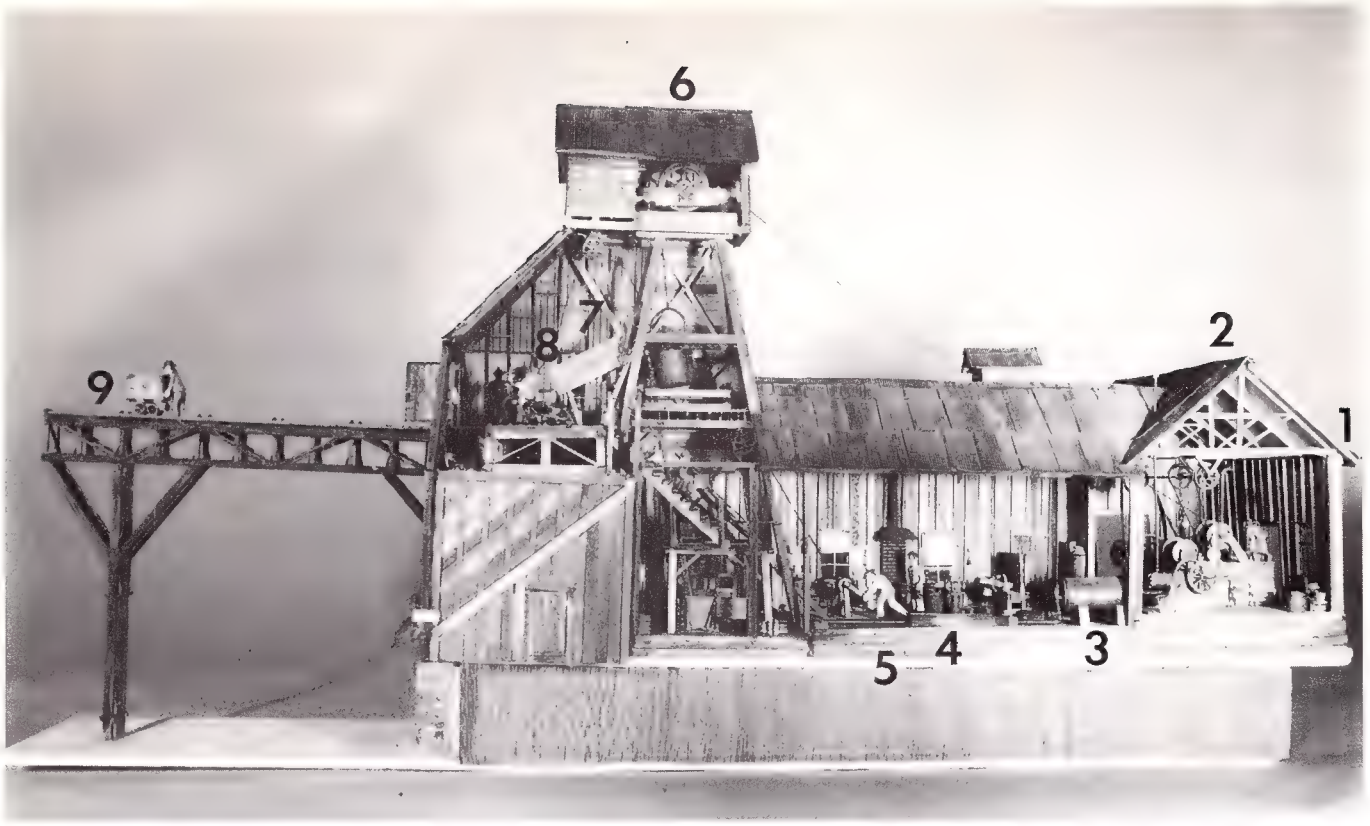
The walls and bins were built up board-by-board. A quickly built jig was used to assemble the rafters. The windows and doors were all scratch-built and have small bits of wire for hinges. I carved the large "concrete" machinery bases from balsa wood and painted them with a heavy coat of artist's acrylic paint to hide the wood grain. The cable is thread that I ran between drops of white glue on my thumb and forefinger to eliminate the fuzz. This treatment gives thread a heavy metallic look. The ore bucket is a copper pipe plug. An interesting feature of this mine is the pre-OSHA (Occupational Safety and Health Administration) safety door designed to keep chunks of ore from falling from a full ore bucket onto the heads of miners below in the shaft. This safety trapdoor had heavy metal screening and was placed in a platform nearly eight feet above the opening to the mine shaft. Each time a bucket of ore came up, the door was winched open manually, closed while the bucket was emptied and opened again for the empty bucket to descend. I made the screen for my trapdoor from fine wire mesh from an old screen door.

The doors on the ore bins were operated by rack and pinion gears on hand wheels. I could not find a suitable rack available so I scratch-built one from styrene. A cutoff disc in a Dremel tool was carefully touched to a stryrene strip as shown in the photo. I had to be really careful that the blade did not cut all the way through the styrene. Burrs were removed with some fine sandpaper.

My HO scale Crown Point and Virginia Mine took first place in the popular vote contest at the 1987 NMRA National Convention in Eugene, Oregon. It also finished second in the judged contest at Eugene. But, perhaps a greater source of pride to me, is that it won second place in structures at the Second National Narrow Gauge Convention in Denver in 1982. But now the contests are over and it's time to get onto digging those shafts. Maybe we can, at long last, satisfy all of those stockholders from the 1930s.



A Dremel tool with a cutoff disc was used to carve the gear racks for the device that raised and lowered the ore bin doors on the author's HO Crown Point & Virginia Mine. *Photo by the author.*



The author's completed HO scale Crown Point & Virginia Mine.

1. THE ENTRANCE POINT FOR A STEAM PIPE FROM THE POWER HOUSE

2. THIS STEAM ENGINE DRIVES AN OVERHEAD BELT SYSTEM THAT POWERS BOTH THE BUCKET HOIST AND AIR COMPRESSOR

3. THE AIR RESERVOIR TANK

4. THE BLACKSMITH SHOP WHERE THE DRILLS WERE KEPT SHARP

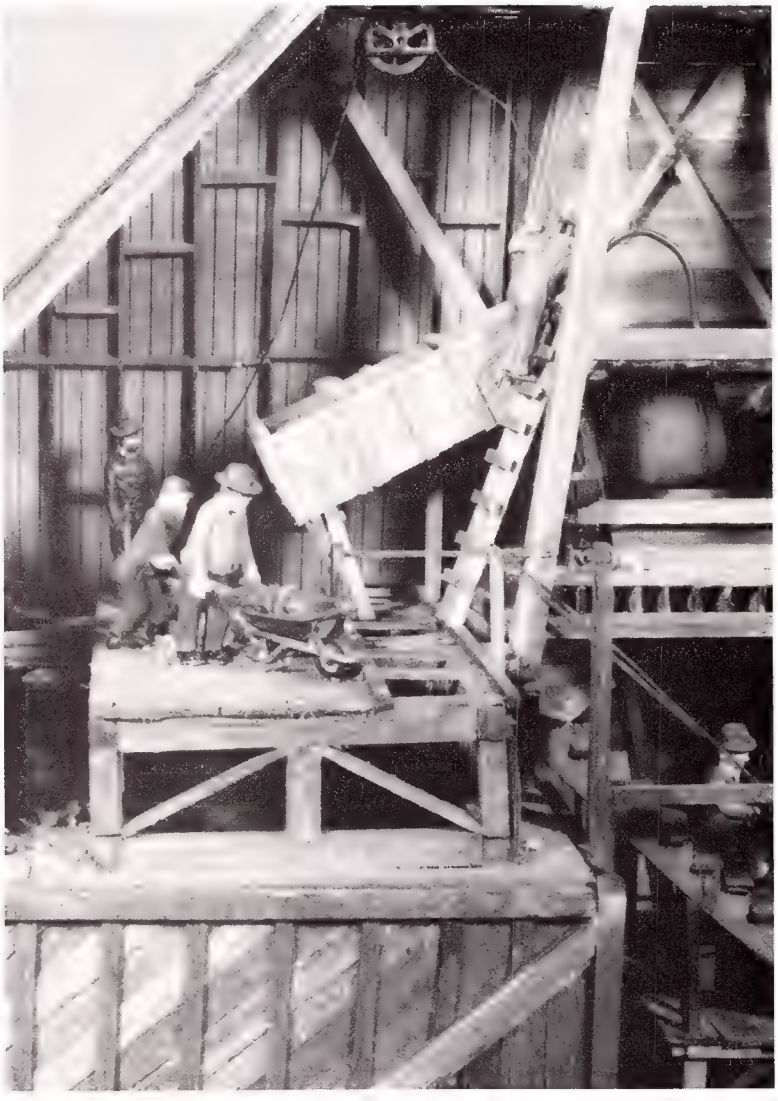
5. A WORKER CRANKS A HAND WINCH THAT RAISES AND LOWERS A SCREENED TRAPDOOR ON THE PLATFORM ABOVE. THIS TRAPDOOR IS DESIGNED TO PROTECT WORKERS BELOW IN THE SHAFT FROM FALLING PIECES OF ORE WHEN THE BUCKET IS DUMPED.

6. THE HEAD FRAME: A CABLE GOES AROUND THE SHEAVE WHEEL AND RAISES AND LOWERS ORE BUCKETS IN THE MINE SHAFT

7. A HOOK AND LINE WILL TIP ORE FROM THE BUCKETS AND DROP IT INTO THE CHUTE.

8. A GRIZZLY IN THE CHUTE SORTS ORE CHUNKS BY SIZE. MEN UNABLE TO WORK IN THE TUNNELS BELOW BECAUSE OF AGE OR INJURY HAND SORT ORE BY GRADE INTO THE CORRECT BINS.

9. THE TAILINGS ARE CARRIED IN A HAND-PROPELLED CAR TO BE DUMPED AWAY FROM THE MINE BUILDING



The ore-sorting area in the author's HO scale Crown Point Mine building. *Photo by the author.*

Plans for the Crown Point & Virginia Mine can be found in the 56-page, soft cover book, *Structures of the Early West,* by Joe Crea and Elwood Bell, MEGA Publications, Northglenn, Colorado, 1975. If you can't find this book at your local dealer, you can obtain a copy for $5.95 from Caboose Hobbies, 500 So., Broadway, Denver, CO 80209-4002.

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THE AMBLEDOWN VALLEY

Build 'em Cheap and Build 'em Quick

by David Pinniger

My Ambledown Valley Railroad proves that it is possible to build a garden railway based on a narrow gauge prototype both cheaply and quickly. Garden railroaders don't have to attempt to recreate the Rocky Mountains with its massive Denver & Rio Grande Western Railroad or to recreate the Welsh mountains with their little steam engines plodding past vast piles of slate. You can avoid a "life sentence" of heaving tons of brick and rubble to construct massive earthworks, vast rockpiles, and tall trestles by choosing another type of prototype to base your line on. I chose to base my

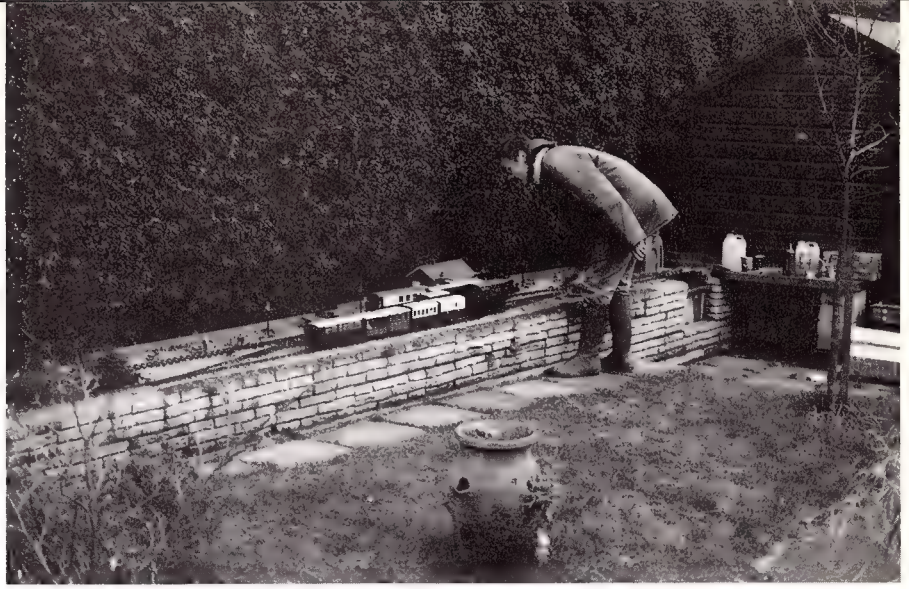
Ambledown Valley #4, LOUISA, running on the mainline. In the foreground you can see the British "chaired" track and the wooden trackbase. *Photo by Peter Dobson.*

Ambledown Valley (and its *alter ego* the Alder Creek Lumber Company) on two lines that ran in very hospitable landscapes: the Sandy River & Rangeley Lakes in the United States and the Lynton and Barnstaple in the United Kingdom. In the rest of this article I'll describe my adventures in building my garden line quickly and inexpensively.

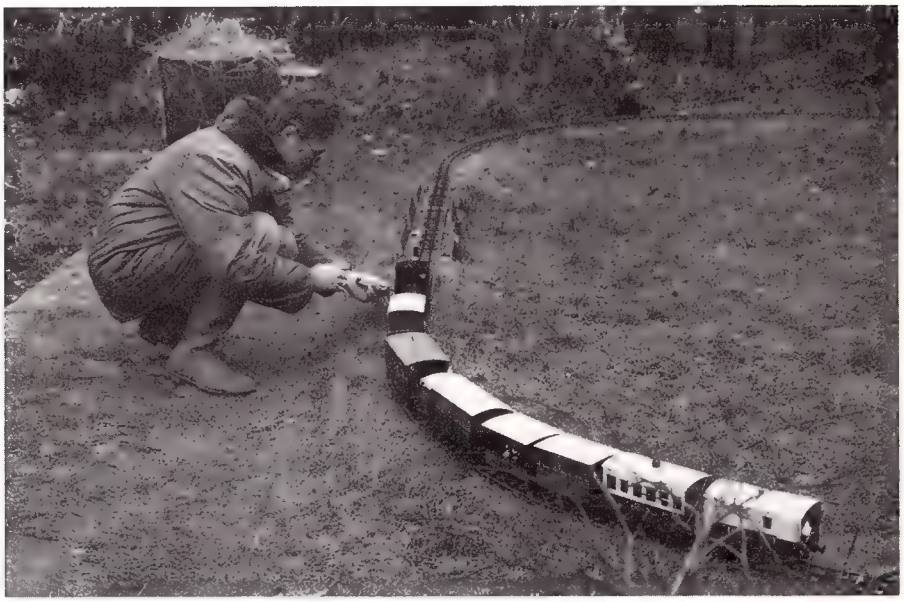
I already had some experience with garden railroads before I began my own – I had enjoyed many running sessions on garden lines in my neighborhood near London, England, especially those on David Rowland's Alderbrook Valley Light Railway. In keeping with my "cheap and quick" philosophy I almost decided to lay my track directly on the ground, but my experience with the lines of others convinced me that this type of construction was just too temporary. I decided to build my railroad on a light timber foundation. True it would move around a bit and eventually rot into the ground but I didn't want to build a monument for future archaeologists to puzzle over. Who knows, I might move or take up golf someday. I surveyed my garden and planned a line that I thought I could complete in a year or two. It would blend into the existing scene and add to the landscape rather than dominate the garden. By a stroke of good luck, no sooner was my plan complete than I obtained (very cheaply), a six-foot circuit of old O gauge coarse scale track. It had brass rail laid on chairs (tie plates) on wooden sleepers (ties) and all I would require was a couple of switches and a few additional lengths of track. With this in hand I was ready to begin construction.

But before construction, I had to acquire some more materials. This was my shopping list:

Timber for posts – 2" x 2"
Timber for track base – 4" x 1"
Screws – 2" long
A spirit level
A very large sledgehammer



The author steaming up one of his locomotives at Bishops Amble. *Photo by Bob Brown.*



The author refueling one of his engines. Notice how the grassy embankment of this ground level garden railroad blends into the grassy area it runs through. *Photo by Bob Brown.*

A friend of the author, Peter Armstrong, brought his 2-4-0T over to run on the Ambledown Valley in its early days. The earth embankments had not yet been added so the structure of the track base is seen. *Photo by the author.*

FIGURE 1.

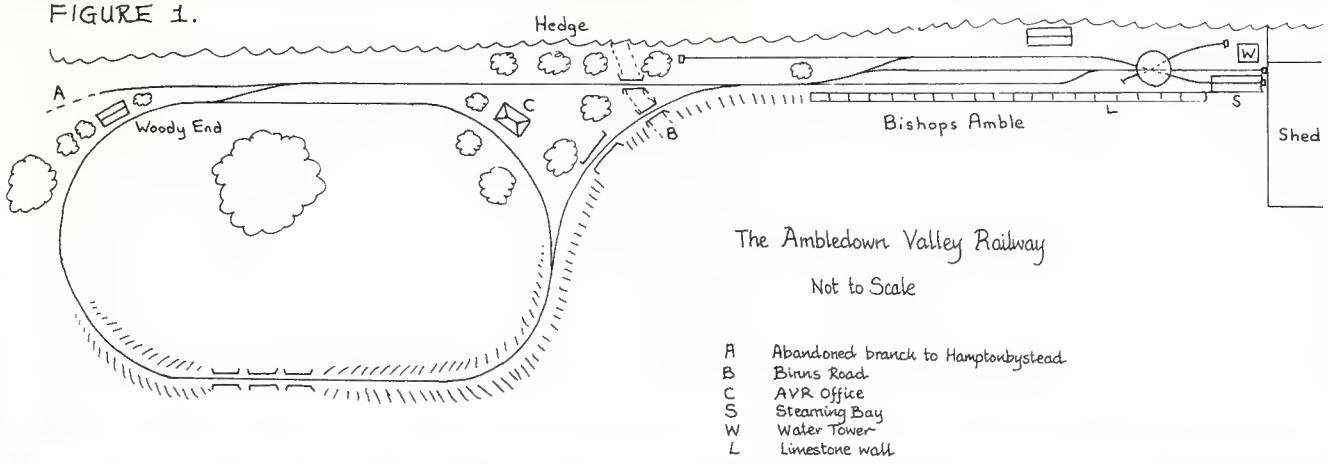


FIGURE 2. Side view of track bed

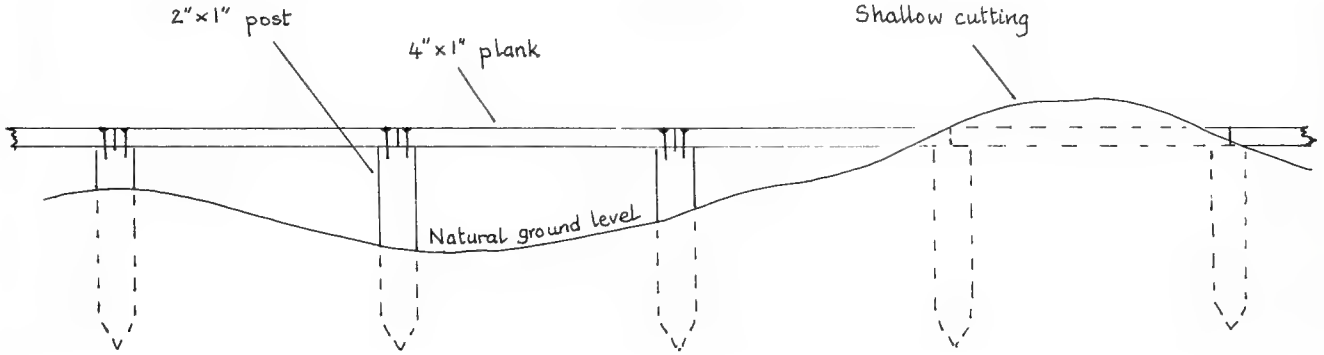


FIGURE 3-a. Top view of track bed

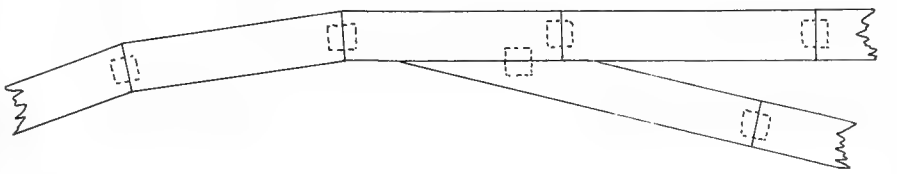
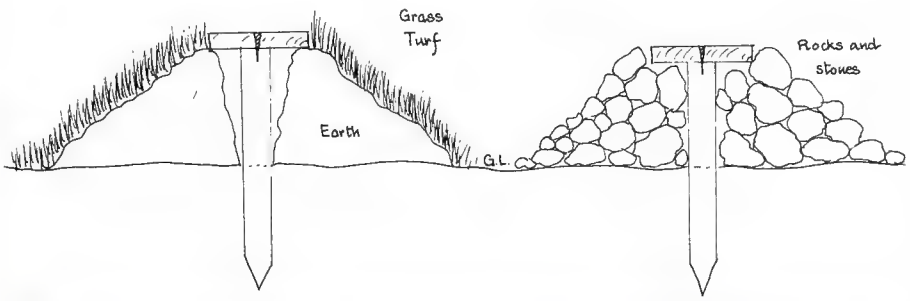


FIGURE 3-b. Section through track bed



I marked out my route (Fig. 1) with short bamboo canes and then cut the 2 x 2 timbers into 18- to 22-inch lengths and sharpened one end of each to a point. Figure 2 shows how I stuck the posts in the ground on 12-inch centers along the route. I got a friend to hold each one while I pounded it into the ground with the sledge-hammer. Use the spirit level and a plank between posts to check the level as you go but leave each post a little high because you will have to adjust the level again and it's much easier to drive a post deeper than pull it out and put it back taller. The 1 x 4 timbers were cut into 12-inch lengths and placed on top of the posts to form a continuous span of track base. After the line was leveled again using the spirit level and sledgehammer, I drove the 2-inch screws down into the tops of the posts to hold the track base in place. Now I had a continuous track base around the garden and I installed my bargain O gauge track with screws and small nails. Figure 3-a shows how my switches were laid on a simple angled base. Now all this may sound like a lot of work. (I must admit there seemed to be an awful lot of posts). This part of the construction was completed in two weekends.

One of the joys of a garden railway is that you can run it in almost any kind of weather. Here a battery-powered Heisler pushes the Alder Creek Lumber Company plow through snow that fell during the blizzard of 1985. *Photo by the author.*

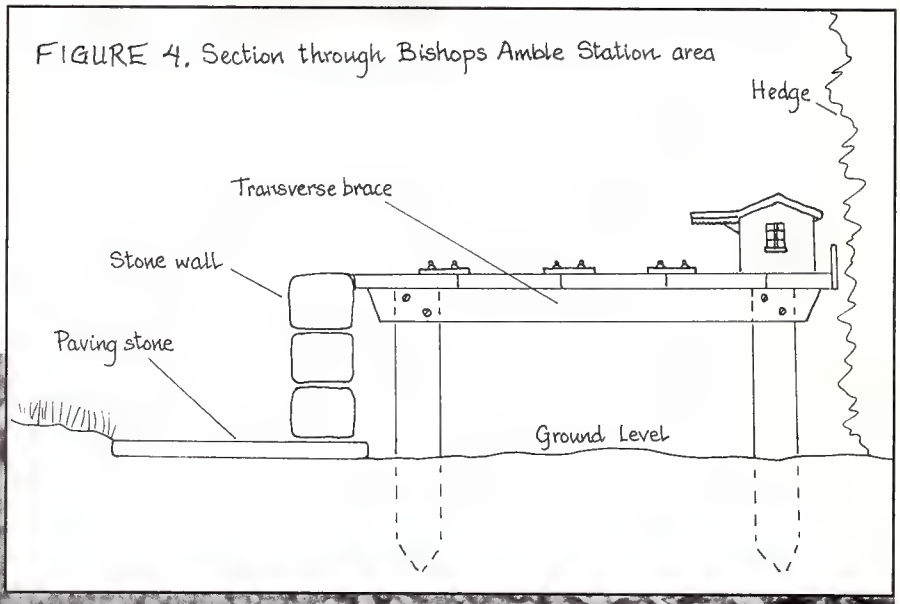


FIGURE 4. Section through Bishops Amble Station area

CHARLES POOTER crossing a bridge over a gap left in the earth embankment. *Photo by the author.*

At this point (unless you are modeling the Chicago El) the trackbase doesn't look very realistic, but next comes the crafty part: figure 3-b shows how you can build up either side of the grade with earth, turf, stones, bricks, or whatever you want to use to create your own railroad's character. After the grade has settled for a few weeks you may have to add some more earth or stones but in a surprisingly short time the track will look as if it was laid on a grassy embankment or on stony fill. At points of your choosing, you can leave a gap in the grade and build an appropriate bridge across.

After completing my basic loop I built Bishops Amble (fig. 4) by laying planks on multiple rows of posts with cross braces. The front of the embankment was faced with a decorative but totally non-supportive stone wall. I initially used loose gravel as ballast on the yard area but found that it got into the flangeways of the switches. Now I use a 5:1 mixture of peat and cement placed around and between the ties. This mixture sets hard but can be removed if the track has to be moved. It also grows a lovely "beard" of moss and lichen in my damp Berkshire climate that really makes the line blend into the countryside.

I have been happily running trains on my Ambledown Valley for over five years now with no major problems so I know my "cheap and quick" method lasts at least that long – and I certainly expect it to last a lot longer. My greatest satisfaction is that the Ambledown Valley has inspired at least four other garden railways built using my simple techniques. Besides being cheap and quick to build, these close-to-the-ground lines fit well into an existing landscape. The only disadvantage is that being so low, they may be hard on people with bad backs or stiff joints. If you are interested in more information on the Ambledown Valley or my other line write me in care of the **GAZETTE** and I will tell more.

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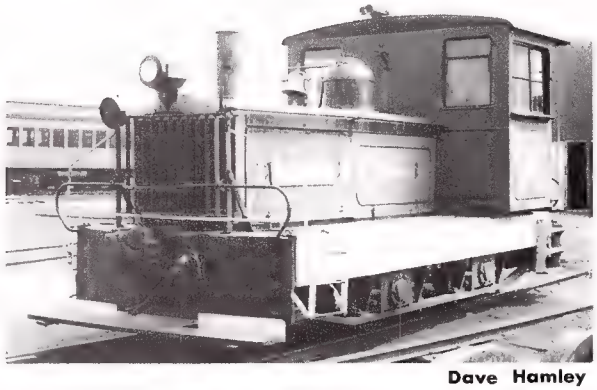

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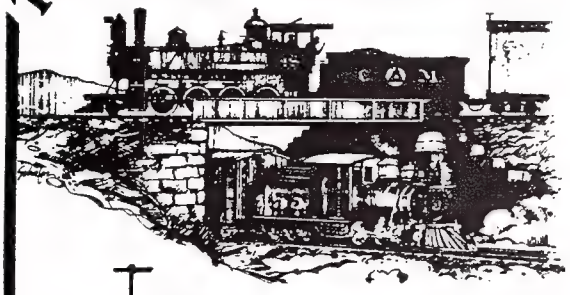

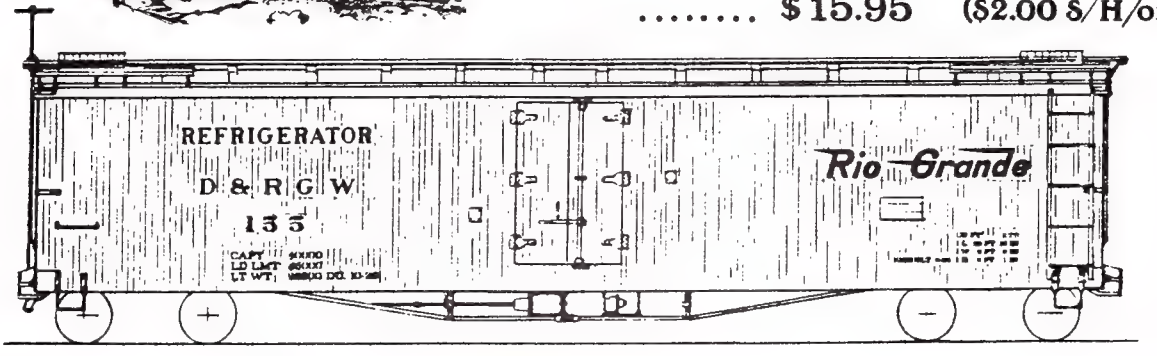

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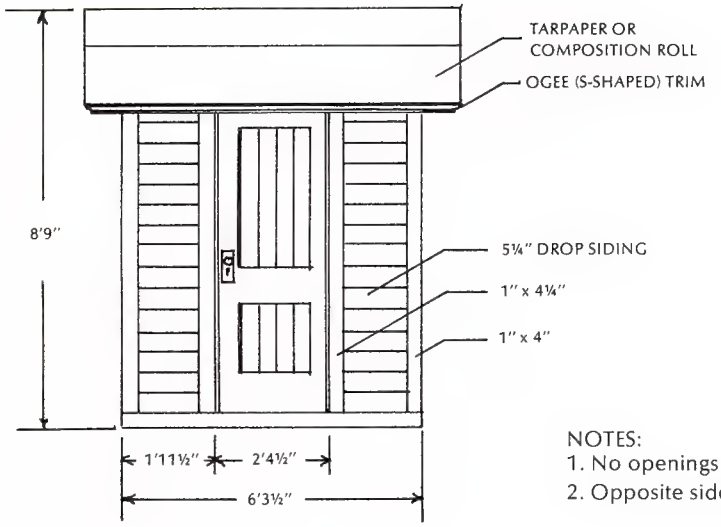
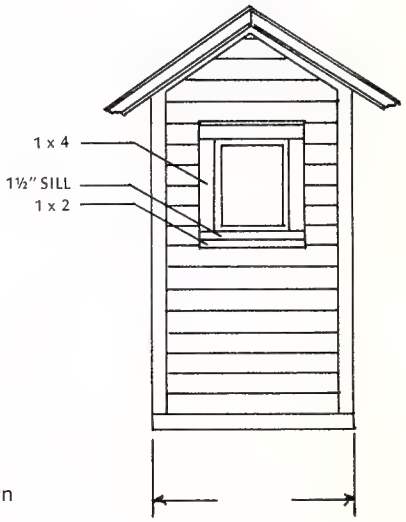
DRAWN FEBRUARY 1988 BY DAVE ADAMS

Front Elevation

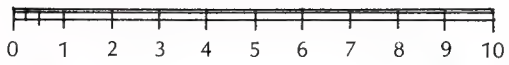


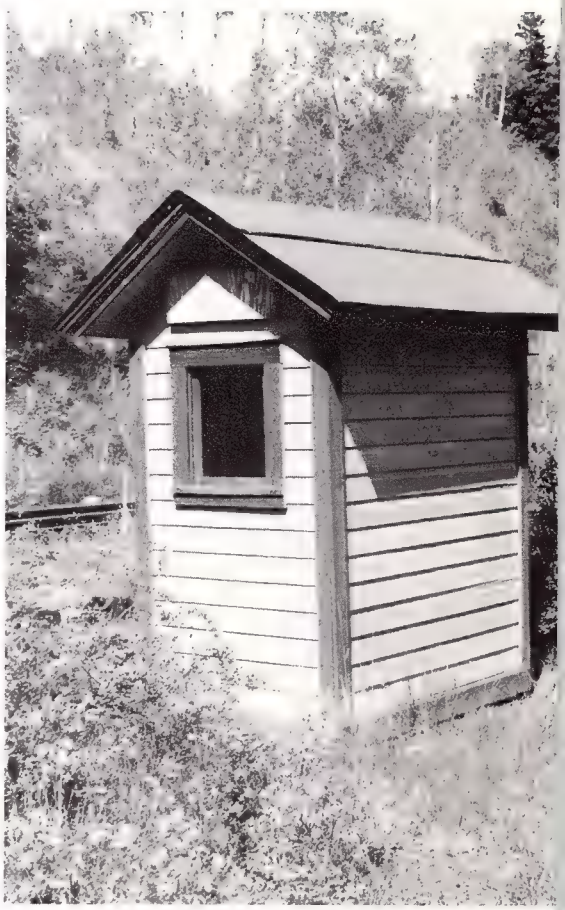
Side Elevation

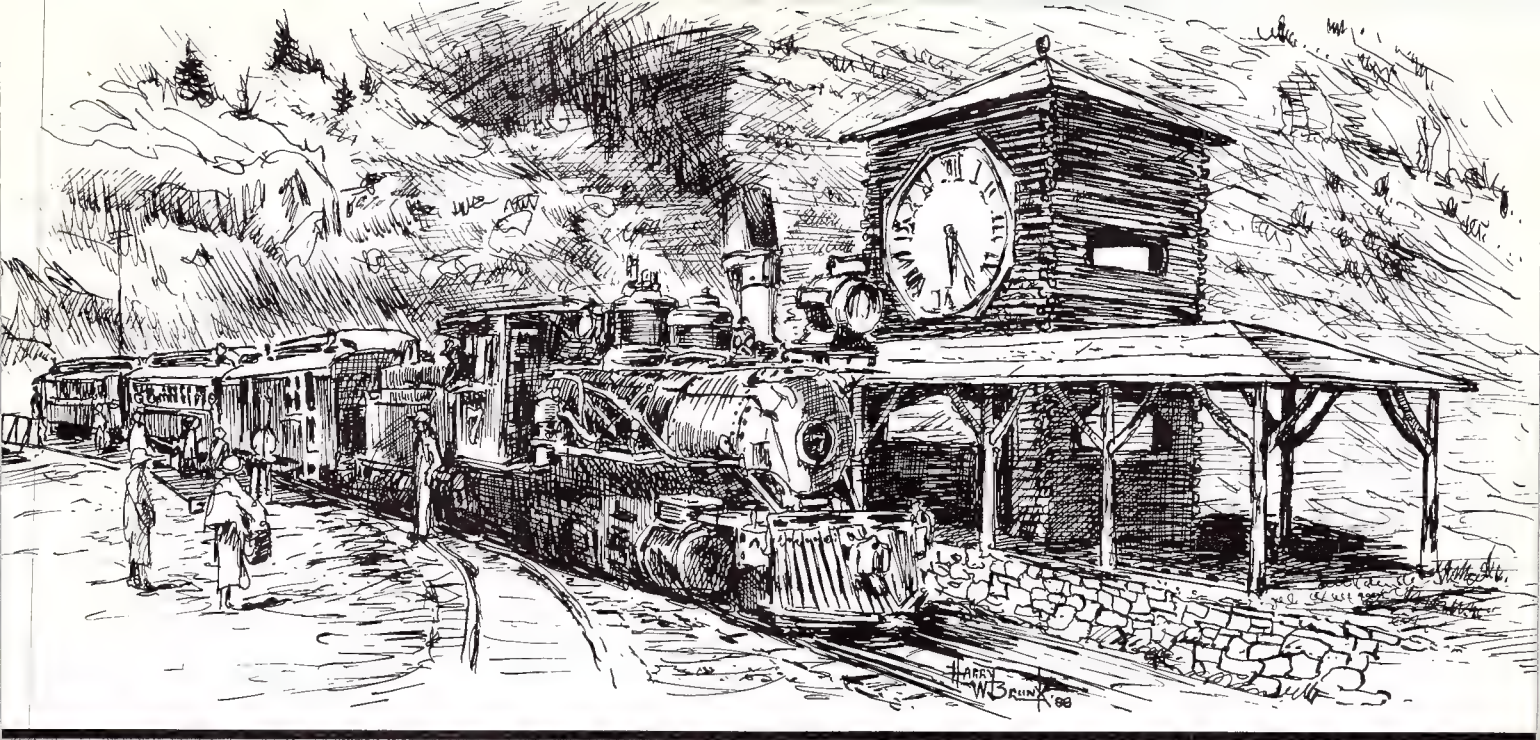


NOTES:
1. No openings rear elevation
2. Opposite side elevation same as drawn

SCALE: ¼ INCH = 1 FOOT







Up Clear Creek on The Narrow Gauge

Part 50: The Silver Plume Clock Tower

by Harry Brunk
Photos by the author except as noted

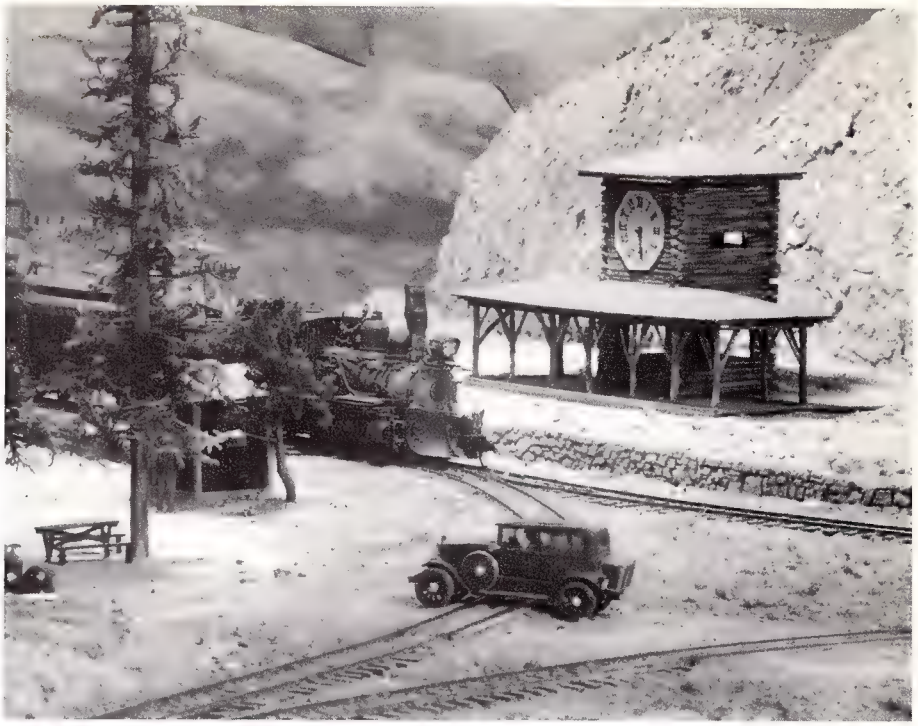
The clock tower that stood across the tracks from the pavilion at the wye at Silver Plume seems to have been one of those local civic projects that show the pride citizens have in their area. As such, it isn't listed in the official railroad records. I can only speculate that it could have been a project of one of the lodges such as the Elks, Eagles, Masons, or Odd Fellows that were active in the area or it might have been a project that involved the whole community.

Whatever its origin, this rustic log clock tower was constructed soon after the pavilion in 1899, and was gone by 1938. Photos showing the clock tower have usually included it by accident – it has often appeared in the background of photos of other buildings or of trains at the wye. Although I've found no photos of the east or back side of the tower, I have been able to piece together enough data to provide accurate general dimensions and details. The plans shown here are the ones I used to build my model of the tower on my Union Central & Northern Silver Plume wye.

The clock tower seems to have been constructed of unpeeled logs with no chinking in standard log cabin style. The supports for the attached covered platform also used native timbers and the angled bracing

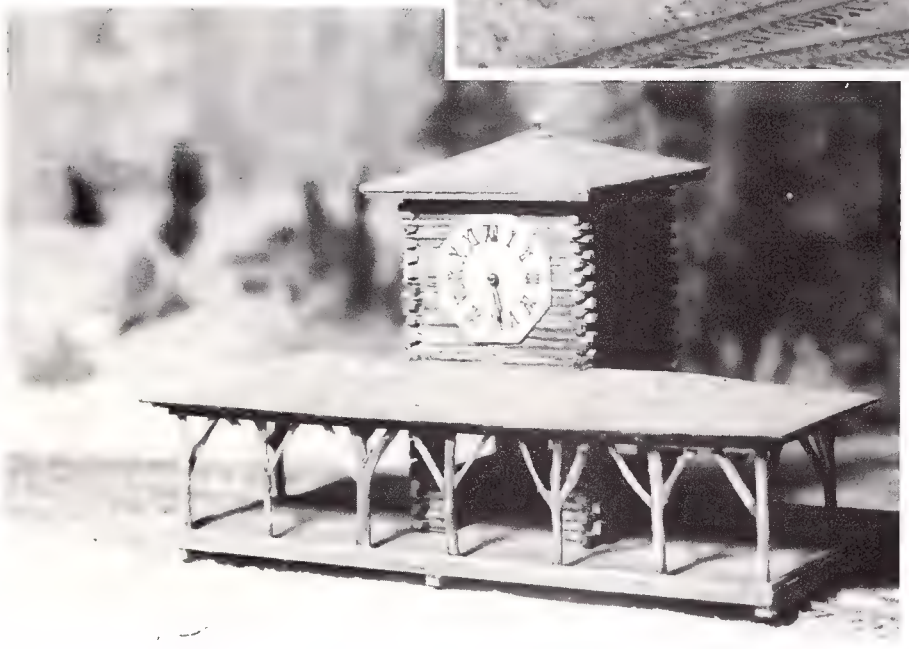
Title illustration: Passengers make their way back to the train after a break. The pavilion is out of sight to the left. C&S #7 has backed the train into the wye and is now ready to take the eastbound leg back through the Silver Plume yards on the trip back to Denver. The clock tower beyond the train lends a rustic mountain flavor to the scene.

Richard Kindig shot C&S #65 eastbound at the east end of the Silver Plume yard. The peak of the station roof can be seen beyond the reefer on the siding at the right. To the right of the reefer is the solid-planked stock chute. It is July 22, 1938, and rail service is about to end. The 54 mile post sign in the right foreground is from the end of the track west of Silver Plume. Mr. Kindig saved it in his collection after rescuing it from a trash pile as the rails were pulled from Silver Plume.



The author's UC&N #9 has just duplicated the moves by C&S #7 described in the caption of the title illustration. Note that the author's clock tower sits farther back from the track than it should (due to its use as cover for a switch machine).

The author's model of the clock tower was built as a removable structure serving as a cover for the switch machine for the north leg of the wye. The platform roof supports are juniper clippings which simulate the natural log construction of the prototype.



was made up of shorter, smaller logs with the ends cut at angles to fit. These unfinished supports added to the rustic character of the structure. I made those on my model from juniper clippings with some of the bark attached as on the prototype.

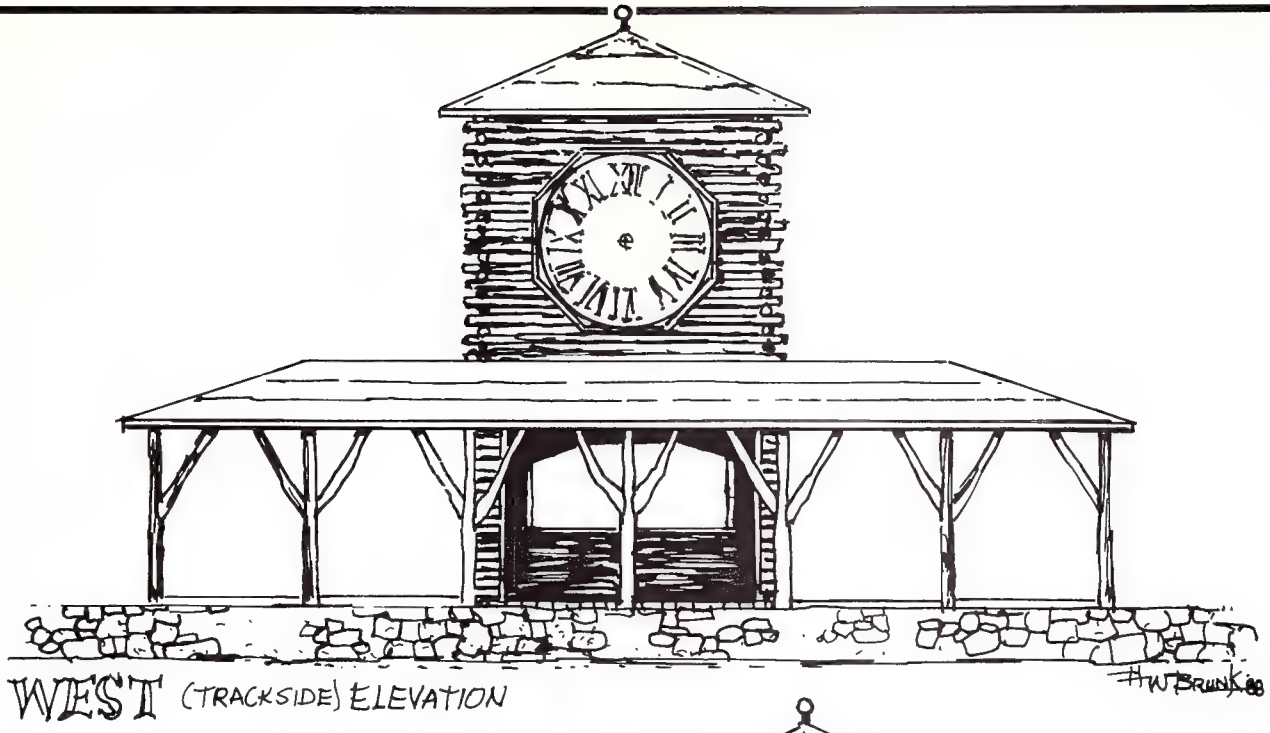
Building a model of this structure is one of those "pure fun projects." If you can find enough straight, even-sized twigs in your scale, you can build the tower up timber-by-timber in log cabin style. I couldn't find enough straight pieces so I decided to use a material that is currently in disfavor in some circles – balsa wood. For my HO scale model, I laid out the four walls of the clock tower on a 3/16-inch balsa sheet including the width of the overhanging log ends. I scribed the divisions between the logs with a #11 X-acto knife and carved and shaped the balsa to simulate rough logs with portions of bark still hanging onto them. The window and door opening were cut and the first dark brown stain applied before the walls were mated. After the first coat of stain was dry I did some additional shaping of the faces of the logs to give the effect of bare wood where the bark had fallen off. I made sure that the ends of the logs that would protrude were rounded, and slotted the sides of the walls so they would mate at the corners with the logs in typical overlapping fashion. Some of the small ends of logs broke off during shaping and were glued on later after the initial staining; however, some of the broken pieces were left off because the prototype also had some broken logs at the corners.

After the structure was assembled, a very light black stain was applied overall. This "grayed-down" the stark contrast between bare and stained wood after my second roughing procedure. Unmortared rock retaining wall from Trains of Texas was used to face-off the elevated rise next to the tracks where the clock tower stood. My tower and platform cover the switch machine that powers the north leg switch of my layout. Because of my miscalculation in positioning the switch machine during track-laying, I was forced to locate the tower farther from the track and retaining wall than it should be. I hope to remedy this in the future.

The prototype clock face featured raised Roman numerals, and I considered etching the face in brass. I may still do this later, but for now a hand-lettered Strathmore board face with the edges built up in layers will make do. The prototype hands and numerals were painted in a light color that doesn't show much contrast with the white or cream-colored clock face. I gave my clock hands much more contrast with their background.

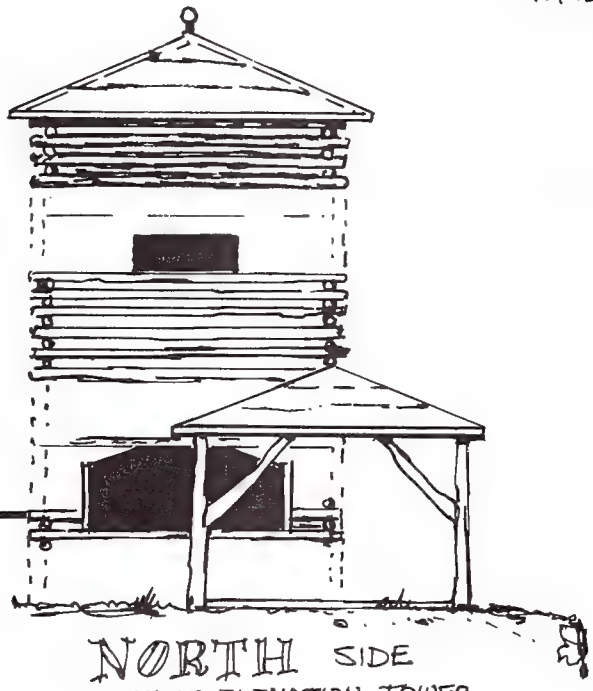
The clock tower for my UC&N Silver Plume wye was the final "required" prototype building as my layout neared completion. That and the picnic tables across the track by the pavilion were the final "seasoning" that gave this area its "flavor." Other areas of my layout have on-going needs and I am working to correct or fill in other areas, so building on the UC&N isn't really over. Still, I'll always remember the clock tower with warm feelings as the "last building" of my layout.

My track plan for Silver Plume and the wye on the UC&N is shown here. The relationship of yard to wye is fairly close to the prototype, though scaled down. After having turned Georgetown's small yard and station area inside out and backwards, I was determined to keep the Silver Plume yard as accurate as possible. Because of my own area restriction, this caused one major compromise – UC&N trains coming up the



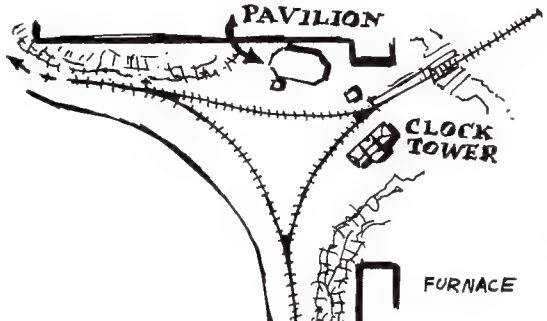
WEST (TRACKSIDE) ELEVATION

SILVER PLUME CLOCK TOWER at the WYE

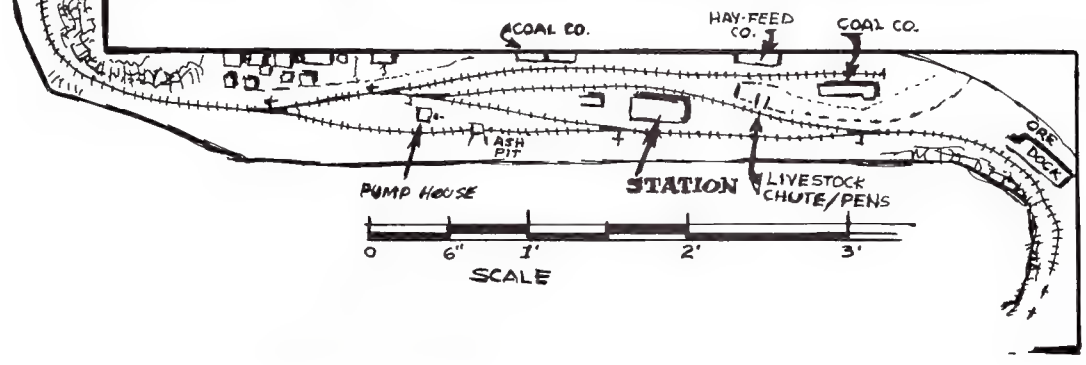


NORTH SIDE

NOTE: EAST ELEVATION TOWER OPENINGS APPEAR TO BE SAME AS SIDE ELEVATIONS



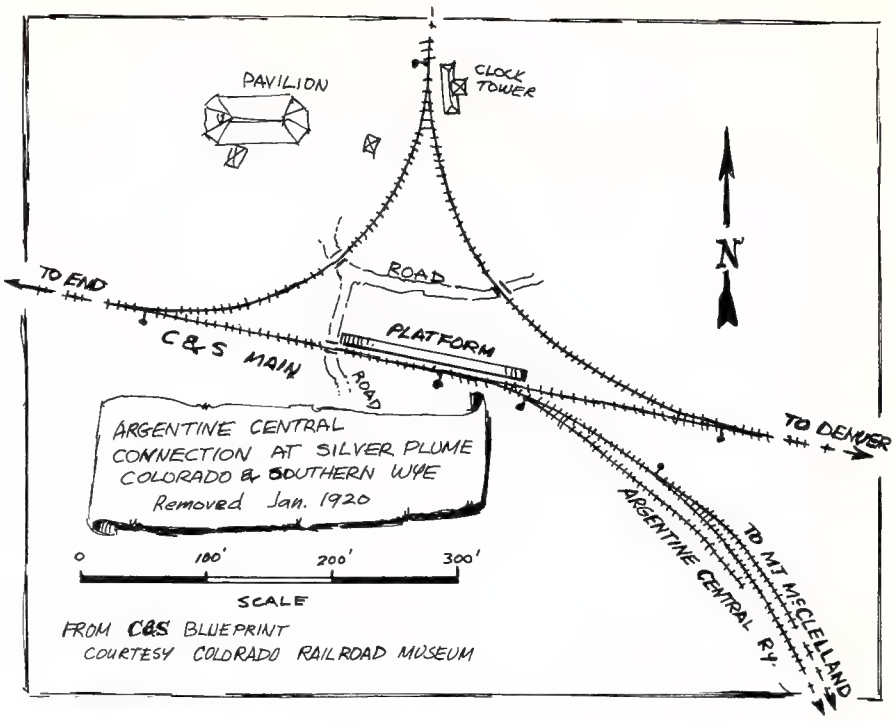
SILVER PLUME on the UC&N



Georgetown Loop pass by the wye before entering the Silver Plume yard – yes – from the *opposite* direction that the C&S prototype trains arrived from. Shorter freight and all passenger trains usually nose into the wye, then turn and back into the yard to the station. It works, and the model yard remains faithful to the prototype in all other respects.

A feature that I have not modeled in any form is the Argentine Central connection with the C&S at the Silver Plume wye. This high-climbing Shay-powered line was abandoned early on; C&S Authority for Expenditure document 3457 shows that by January, 1920, the switch was removed. Thanks to copies of this AFE from the Colorado Railroad musuem, I know that the rail was 40-pound through here – the map shown is based on this document. The Argentine Central has been the subject of several books and is a fascinating road that would be worth modeling in its own right.

I have included some photos and sketches of buildings throughout the Silver Plume area both past and present. Improvements



In downtown Silver Plume, this well-restored business building now houses an antique shop. It has inspired kits in more than one scale. Other buildings along Main Street are in various stages of restoration.

Opposite: Ron Peck took this photo of a brick "Hay Grain Wood Coal" building on Woodward Avenue in Silver Plume in 1952.

The restored Silver Plume Hose Company sketched here is at the corner of Woodward and Main in Silver Plume. Unknown to many, it also houses a good collection of antique fire-fighting equipment. Not shown in this sketch, but around the corner to the right, C&S Caboose #1006 now shows off its new and accurate paint job: a bulls eye logo on one side and the earlier block-lettered monogram. on the other.

Ron Peck provided an out-of-print postcard on which the author based this sketch. C&S #7 points into the early morning sun while standing by the pumphouse near the western edge of the Silver Plume yard. The rubble of the footings from the old water tank can be seen just below the front of the engine.

show up each year due to on-going restoration. The old west flavor is present in these buildings and, though I couldn't find room for them on the UC&N, they would be interesting projects to model. Some have been reproduced as kits. Ronald Peck provided me with a picture postcard from which I sketched the Silver Plume pumphouse. I am not able to place the "Hay Grain Wood Coal" brick building in the photo taken by Ron in 1952. The only related building on my 1900 Sanborn maps is the wooden frame Hay and Grain barn that I showed in Part 46 (September/October 1987 **GAZETTE**). The brick building in Ron's photo may well have replaced the old barn although it could have been nearby competition.

"Pocket-sized" though it is, Silver Plume has its share of interest, both past and present. Once again the sound of steam railroad whistles and exhausts can be heard there in the summer months. "Over south there," the rail yards and station are alive and well once more.

Often a certain prototype's engines influence a modeler's choice of the line he is going to model. Next time I'll show how the C&S narrow gauge engines were an influence on me and how my roster was built-up of C&S engines commonly seen on the Clear Creek narrow gauge.

Gary Carter

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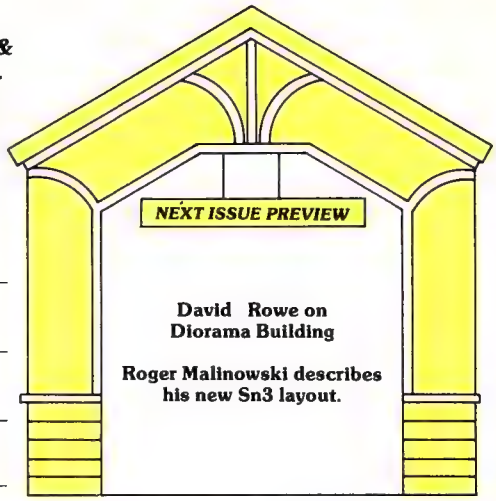

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☐ **JANUARY/FEBRUARY 1985** - C&S ½ inch Scale Mogul, The Georgetown Loop Opened, Ruth Mining Locomotives, Scratch-building an ET&WNC Boxcar, Building the On3 Durango Press Flanger 01, Saw Filers Shack, F&CC 2-8-0, 18 Ton Climax.

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☑ **JANUARY/FEBRUARY 1986** – Yosemite Lumber Co. Camp 17 in HO Scale, An Sn2 Porter, Copper in the Mountains, A ½-Inch Scale 18-Inch Gauge Porter, Modeling the Gravity Stamps, Brass Lantern Caboose #0505, The Georgetown Station, Snowplowing Over Diablo Pass, A Welsh Slate Quarry Locomotive Facility, Baldwin Plantation Locomotive, SPNG Combine.

☑ **MARCH/APRIL 1986** – The Buffalo Boy Tram House, Copper in the Mountains, Part 2, Powell's Produce, Part 1, Radio Controlled, Battery Powered LGB, Yosemite Sugar Pine Camp 17, Part 2, Gravity Stamps, Camp Cars for Your Logging Show, a New England Bridge, Baldwin 2-foot Saddle Tanker, West Side Shay #12.

☐ **MAY/JUNE 1986** – Cabooses of the Tionesta Valley, Painting Figures for Model Railroads, Deadwood Central 3-foot Gauge Trolley Car, Lawndale Gondola, The Slim Gauge Guild, The Log Turner, Cabin Cars for Your Logging Show, West Side Lumber Shay #15, Old Missouri Firehouse, D&RG Boxcar 34500, Porter 0-6-0.

☑ **JULY/AUGUST 1986** – The Cairo & Kanawha Ry., An On30 2-8-0, Gilpin Tram Ore Car, Snowplows of the SR&RL, Boilers and Steam Engines, The Caspar, South Fork & Eastern, A Logging Camp Cookhouse, Denver, Boulder & Western Caboose & Colorado & Southern Coach.

☑ **SEPTEMBER/OCTOBER 1986**– Sandy River Flanger, Sn3 RGS, Fixing Up the LGB Mogul, Camp 8 on the Dolly Varden, Narrow Gauge Motor Cars, On3 Drop Bottom Gondola, Angels Camp Branch, C&S Cabooses, Making Log Retaining Walls, A Logging Camp Dining Car, RGS #23.

☑ **NOVEMBER/DECEMBER 1986**–Operation on Logging Railroads, Modeling in 9mm Scale, Crown Mountain Snowplow, An 8-Ton Porter, Making Working Windows, A Narrow Gauge Center-cab Diesel, Stock Loading Chutes, An Office & Commissary Car for Your Logging Show, 30-inch Gauge Pacamayo & Huanchaca Mogul, Virginia & Truckee Combination Boxcar.

☑ **JANUARY/FEBRUARY, 1987** – Trestle Building RGS Style, Climax Log Car, On3 Crown Mt. Winch Car, HOn3 D&RGW Work Car, The Tank at Brockton, The Georgetown Power Co., On3 Logging in P.A., The St. Clair Lumber Co. Woods Mill, Logging in Mason Country, WA, Part 1, Diamond & Caldor Camp & Cabin Cars, Monson RR 2-Foot Snow Equipment, V&T 2-6-0, #19 and #20.

☐ **MARCH/APRIL 1987** – The Gentle Art of Clutter, The Colorado & Southern Connection, Building an On30 0-4-2T, Building Caboose #0578, Wood-Burner Weathering, Reefers on a Budget, The Clear Creek Sampling Works, Logging in Mason County, Part 2, Read Lumber Co. Camp Car, V&T Miners Caboose #9, V&T Water Car.

☑ **MAY/JUNE 1987** – Tower Skidders, Smelters Part 1, On3 Internal Combustion Climax, RGS Plow Flanger in ½-inch Scale, My Carrabasset & Dead River in HOn30, The Merced Gold Mine Porter, An On30 Forney, A Narrow Gauge Circle Tour, The Kemtron Waterfront Diorama Part 1, Body Putty Modeling, S. D. Warren Paper Co. Tram Part 1, D&RGW Track Scale, United Verde & Pacific 2-6-0, V&T numbers 23 and 24.

☐ **JULY/AUGUST 1987** - The Jefferson Depot in ½ Inch Scale, The Buffalo Boy Cable Tram, Why Sn2? An Sn2 Boxcar, Sn2 Conversions, Urethane Foam Scenery, Fugate Lumber Co., Modeling the Georgetown Loop, Part 1, An On3 Four Wheel Steam Crane, PBL 5500 Series Stockcar, D&RGW Grant C-16, V&T McKeen Motor Car #22.

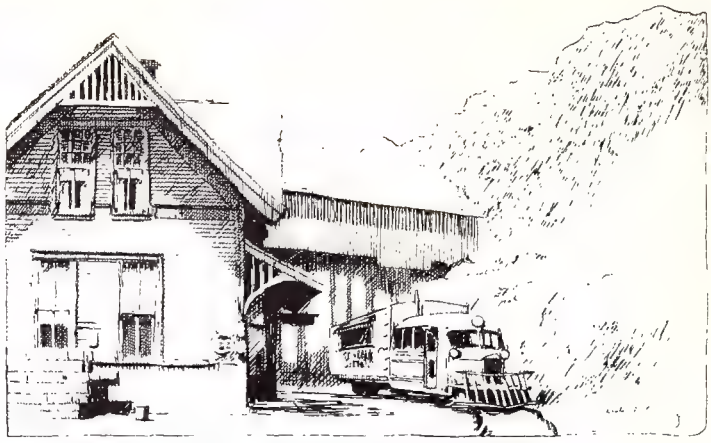
☐ **SEPTEMBER/OCTOBER 1987** - The Rogue River Valley Railway, A ½-Inch Scale Contractor's Diesel for LGB, The Randsburg Barbershop, On3 Uintah Water Car, West Side Lumber Co. Heavy Duty Flatcars, The Spanish Peak Lumber Co., A Diesel Drive Train, The Silver Plume Station, D&RGW Chama Oil House, NPC #21, V&T Motorcar #99.

☐ **NOVEMBER/DECEMBER 1987** - Building C&S Rotary #99200, Building Chama in Sn3, Jefferson, Colorado, Water Tank in ½-Inch Scale, Cousin Jack Mill, Eureka Mill Railroad, Building a West Side Railcar, C&S/RGS Stockcars, Tracing the Bridgton Line, North Pacific Coast #13, Rico Bunk House and Section House, V&T Motorcar #23.

☐ **JANUARY/FEBRUARY 1988** - The Farallones Midland, Coloring Structures with Chalks & Dry Pigments, Kirkfield Crushed Stone Co., A Box-Cab, Gas Locomotive for Tuolumne Forks, HOn3/HO Moose Jaws Lumber Co., Sn3 San Juan & South Park, Two-Foot Freight Cars in ¾ Inch Scale, My Quest for Trees, Falk #1, Riding the Bridgton Line, D&RGW Sheds, Chama, D&RGW C-25, Forks Creek Pump House, Hetch Hetchy Motor Cars #19, 23, 20.

☐ **MARCH/APRIL 1988** - Colorado & Southern Combine #20 in ½-Inch Scale, D&RGW Rail & Tie Car #6051 in On3, Cat and "Kittens," An Old Brick Furnace, Aged Timber the Easy Way, The Rico Coal Pocket, Passenger Cars of the Rio Grande, Part 1, The Silver Plume Station, Falk #1, Part 2, Dolores, CO Water Tank, D&RGW Bunk House, Chama, Hetch Hetchy Railcars #21 and 22, Wiscasset, Waterville & Farmington #6, West Side Heisler #3, Yosemite Short Line Hopper Car, Merced Gold Mine Ore Car.

The Narrow Gauge SCENE



by Charlie Getz

PASSENGER CARS OF THE RIO GRANDE
Part 2: Combination Cars

Everybody loves combination cars. A combination car with a locomotive can be a whole passenger train unto itself. Attached to a freight, a combination car can get passengers and baggage efficiently to destination. The Rio Grande was not immune to combination fever and many a freight train trailed a "combine."

In the last issue I discussed Rio Grande baggage and baggage/mail cars. In this issue I will describe the Rio Grande's fleet of combination cars. This material is a "first offering" on the subject and I welcome your corrections and additions.

In the "modern" or post-1926 era, the Rio Grande operated some eleven combination cars. They seem to defy classification except to say that they were either short or long and had narrow or standard size baggage doors. They all had a small piece of metal between the stovepipe and the clerestory that extended curled up over the clerestory to protect the wooden roof from the heat of the stovepipe.

The short combination cars were numbered 202, 204, 209, 210, 212, 214, and 240-242. These cars were 42 feet 1-inch long and 8 feet 5 inches wide. (All of the Rio Grande combines were this width.) The long combination cars were numbered 211, and 215 – they were 44 feet 4 inches long. These dimensions changed during the various rebuildings in the late 1920s and John Maxwell's plans reflect their rebuilt dimensions. Maxwell's plan D-19 covers combinations 210-212 and his D-154 shows "combine" #215.

According to my folio sheet, combinations 202-210 were built by the Rio Grande

Denver & Rio Grande Combination Car #202 at Durango, Colorado. This car is an example of one of the Rio Grande's nine short combination cars. These cars had an overall length of 42 feet 1-inch. Notice the piece of metal behind the smoke pipe on the roof that protected the wooden roof from heat. *Photo, courtesy of California State Railroad Museum, collection of Paul Darrell.*

Denver & Rio Grande Combination Car # 212 was photographed at Durango, Colorado. *Photo, courtesy of California State Railroad Museum, collection of Paul Darrell.*

in 1882. Combination #211 was built by the Rio Grande in 1903. Billmeyer and Small built numbers 212 and 214 in 1878 and #215 in 1879. Combinations 240 and 241 were built by the Rio Grande in 1883. Number 242 started as a coach but was changed to a combine in 1925. I have been unable to determine anything else on the history and disposition of this car.

A first glance at photos or plans gives one the impression that combinations 202-210 were all identical, but subtle differences did exist. For example, 202, 204, 209, and 210 had three-paneled baggage doors while the others had no panels at all in their baggage doors. In some photos #209 appears to have had metal sheathing applied over the wood panels on her baggage doors. Although Rio Grande passenger equipment was presumably all painted Pullman Green in 1918, combination #210 still wore her original red paint as late as 1939. Car #211 sported a duck-billed roof and car #212 featured a bull-nosed roof.

Combinations 240 and 241 both featured narrow "mail" doors instead of the usual wide and often three-paneled baggage doors. Number 240 was also the only narrow gauge combine to operate in North America that was divided into four sections: coach, mail, baggage, and express. Number 241 also had a mail compartment but was only divided into three sections not four.

Combinations 212 and 215 are interesting because of their involvement in the "Great Mexican Car Swap" which I will discuss shortly. Number 215 was built in the 1870s as coach #20 and renumbered 215 in 1887. The cupola that allowed her to be used as a caboose on the Pagosa branch was added in 1928 and removed in 1941. She was still painted red as late as 1928, and was one of the first passenger cars to be painted Rio Grande Gold in 1950; she was not repainted green until 1941. Handrails and a roof walk were added so that trainmen could move on the roof from car to car. The handrails were not removed until late 1946 or early 1947.

In 1942 when Mexican railroad officials asked the Rio Grande officials if they had any surplus equipment for sale, the Rio Grande made of list of the surplus equipment that included combination car #215. The Mexicans ordered #215 but never received her. When the Rio Grande officials realized that combination #215 was in better shape and almost four feet longer than her sister car, #212, they (unknown to the Mexican officials) simply swapped numbers, sending #212 to Mexico with number "215" painted on it. The original #215 became #212 and exists to this day on the Durango & Silverton Railroad.

In spite of getting the "short end" of this deal, the Mexicans remained great fans of combination cars and also bought combines 202, 204, 209, 214, 240, and 241 giving Mexican narrow gauge railroads quite a fleet of combination cars. I presume these Mexican combination cars have long since been scrapped. Number 210 was apparently dismantled at Salida in 1947 but I do not know about the disposition of numbers 211 and 242. That leaves #212 (the former #215) the only Rio Grande combine known to be in service at this writing.

I have still found very little information on D&RGW passenger cars other than in the sources mentioned in my last column: the 1982 *Narrow Gauge Pictorial, Volume II* edited by Robert Grandt (available from R. Robb, Oakland, California) and Greg LePak's *Vanishing Varnish* (Alpine Publishing Company, Littleton, Colorado, 1978). The plan sets of John Maxwell (available from him at 3220 West Balsam St., Wheat Ridge, CO 80481 or from the Colorado Railroad Museum, P.O. Box 10, Golden, CO 80410) are also helpful. Much of the information for this column came from a complete set of 1924 folio sheets that I have in my possession.

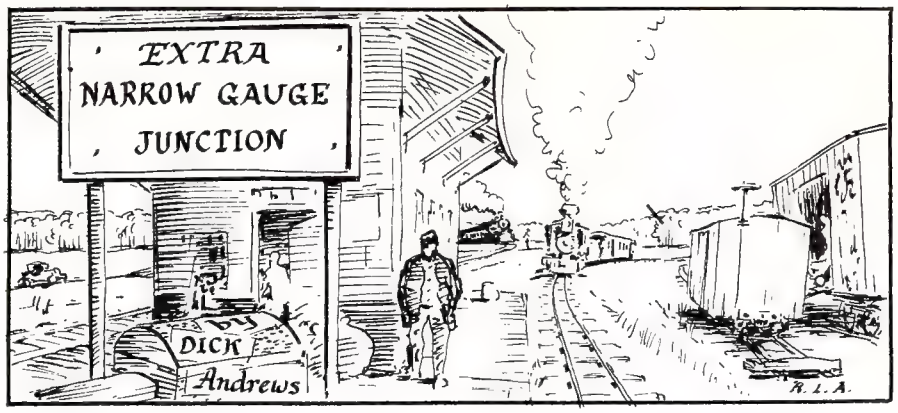
Besides the Maxwell plans mentioned above, you can find a plan for #215 in Gordon Chappell's, *Logging Along the Rio Grande,* Colorado Railroad Museum, 1971. There are also plans for this car in the October 1947 MODEL RAILROADER and the November 1972 NMRA BULLETIN. There was also a plan for a Rio Grande combine in the November 1946 MR.

In my last column I forgot to mention that there are baggage car plans in the February 1947 and July 1960 issues of MR and the May, July, and August, 1964, and February 1965 issues of RAILROAD MODEL CRAFTSMAN magazines.

Pat Beres, a vocational agricultural teacher, wrote about my comment in the November/December 1987 issue that freight cars were blocked together by type and apparently sometimes by color. Pat says that bunching them kept cars of different shippers together and was not for any color consistency. It makes sense that a series of cars would be assigned to a particular stockman or company and that these cars would be kept together for bookkeeping purposes.

In my next column, I will examine Rio Grande coaches. As always, write if the mood strikes.

Chalee



by Dick Andrews
Photo and track diagrams by the author

Most narrow gauge railroads in the U.S.A. had the simplest of track arrangements where they met their "wide gauge" connections. Passengers just walked across a bit of platform to change trains. Mail bags, express items, and baggage were just toted across the gap. For freight transfer, spurs of the two gauges came parallel to each other so loads could be easily shoveled or hefted across.

Crossing diamonds were an expense most of these little pikes tended to avoid. Nothing, however, better contrasts the gauges than such a diamond with a crossing angle of some 30 to 40 degrees. Such diamonds did occur. Farmington yard, where the 2-foot gauge Sandy River & Rangeley Lakes Railroad met the standard gauge Maine Central, had several such diamonds. A diamond also existed where the Maine Central's Rockland Line crossed the the Wiscasset, Waterville & Farmington at Wiscasset, Maine.

Happily, modeling one of these crossing diamonds isn't too much of a job – if you use my "log cabin" method. Drawing 1 and the photo show how I paired each running rail through the diamond with a guard rail next to it. There are four running rails, two for each gauge, so there are four guard rails.

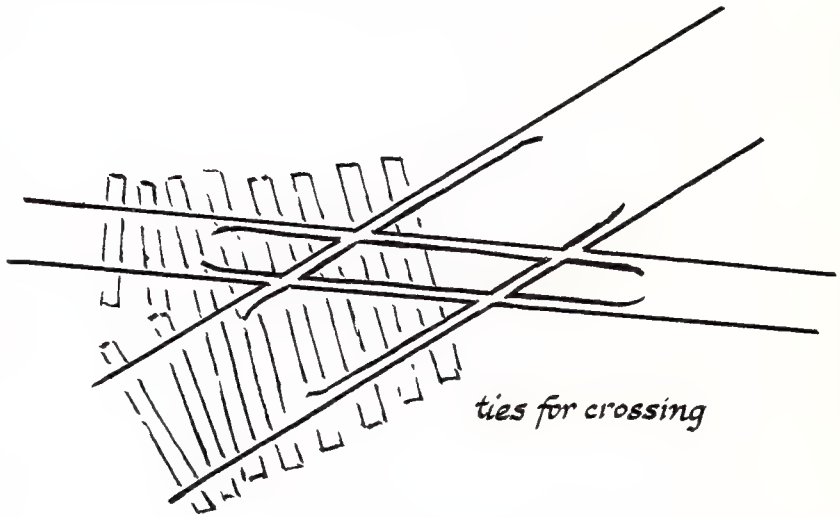
You'll need a Bernzomatic torch – it has plenty of heat for soldering rails – and some low-heat silver solder and flux from your nearest jeweler's supply outlet. By silver soldering the four running rail/guard rail assemblies, you will be able to solder the rest of the diamond with soft lead/tin solder without disturbing the guard rail assemblies.

If your narrow gauge flangeway is more narrow than would otherwise be the case with rails butted base to base, file down the base of the guard rail as shown. Fortunately, wheel sets like going straight so there won't be much tendency for flanges to "hang-up" any place in the assembly if the narrow gauge runs straight through the diamond. The exact crossing angle will depend on your layout plan and you can be very flexible in obtaining the angle you want. Once you have your running rail/guard rail assemblies silver soldered you can set up a preliminary diamond. Spike your narrow gauge rails down temporarily on a base such as homosote. Then position your standard gauge rails over them with a few ties to maintain level alignment. Next mark the crossing position of these pairs.

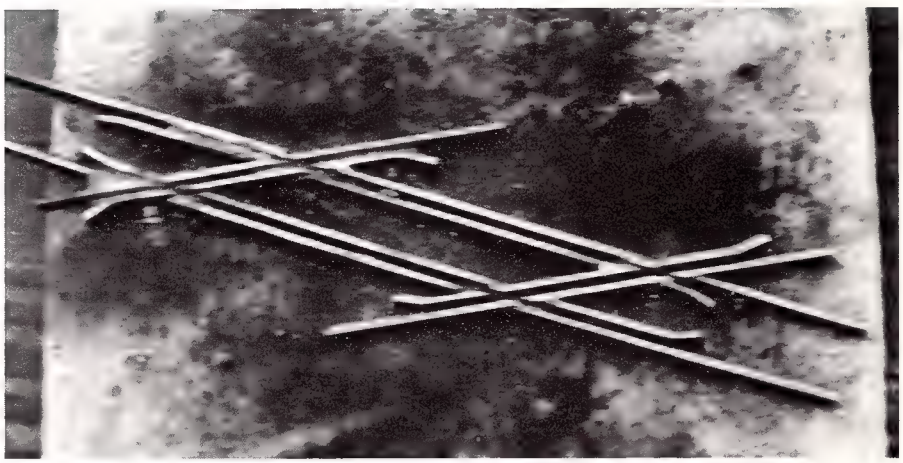
Remove the top set of rails and with a mill file on edge simply "mill" in a slot halfway down from the top of the rail assembly to the base. This is the "log cabin" of it and drawing 2 should make it all clear. After notching the rails of one of the gauges halfway from the bottom, notch the other halfway down from the top. Assemble the rails as shown in drawing 3 and set this "log-cabined" piece of work on a heat-proof base. Then spike it down as shown in the photo, checking the gauge with a truck for each track width. Fill up the gaps and intersecting flangeways with soft solder.

Now take the blade out of your hacksaw and slide it to-and-fro in each flangeway to the depth of flanges used. Before installing the diamond on your layout, note in drawing 1 how the ties are laid at a comprise angle so as to support both lines of track firmly and with a level surface.

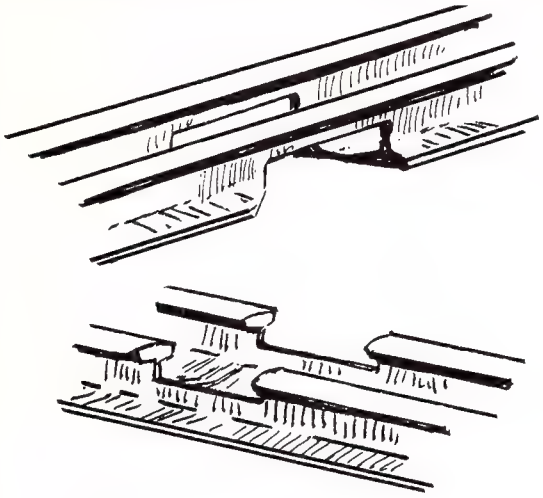
Drawing 1. Plan for a narrow gauge/standard gauge crossing diamond.



The author's crossing diamond for O and On2 spiked to a heat-resistant pad for assembly with soft solder. The rail is code 125 assembled by the author's "log-cabin" method. The running rails and abutting guard rails were silver soldered together before the diamond was assembled.

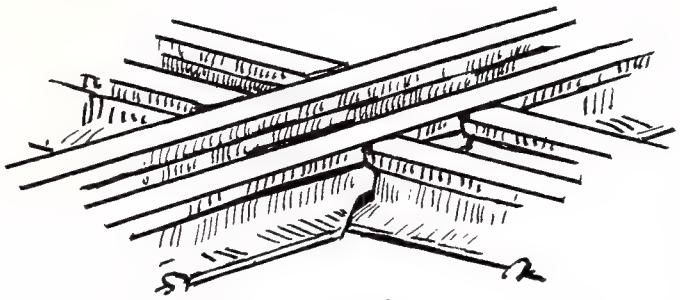


Drawing 2. The running rails and guard rails have been silver soldered together. The notches are like the notches put in logs before assembling a log cabin.



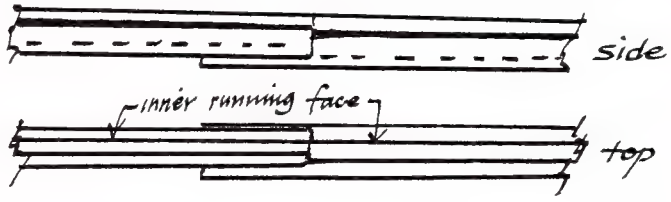
notched, ready for assembly

Drawing 3. The "log-cabin" method of crossing assembly.



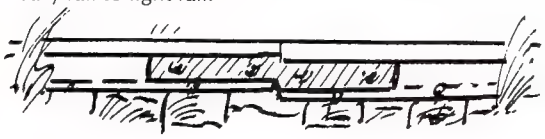
assembled, ready for soft solder

Drawing 4. An easy way of "stepping-down" from heavy rail to light rail.



method of joining rail sizes

Drawing 5. The prototype way of "stepping-down" from heavy rail to light rail.



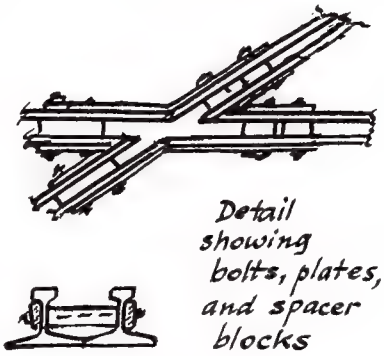
special pair of fishplates

Your narrow gauge rails elsewhere on your pike will be lighter than your broad gauge rails but at the junction you may wish to lay both gauges with standard gauge weight rail. If you do this there will be some point where your narrow gauge must "step down" to the lighter rail. Drawing 4 shows a simple method of doing this. Make a section of transition rail by filing a bit of the larger rail away down to its base. Then just stand one end of the lighter rail on it and solder the two together. Take care so that there is no jog up or down at the rail surfaces. You could also use a compromise fish plate like the prototype did (drawing 5) and bolt it all up.

The question of what rail size the Sandy River used has been tossed around from time to time. Some people mention 85-pound rail, reputed to have been brought in during the decade of Maine Central ownership. But Temple Crittenden, in his study of the system, *The Maine Scenic Route* (McClain Printing, Parsons West Virginia, 1966) suggests that the 85-pound story is possibly a myth and, furthermore, that the Maine Central was handing the narrow gauge a fair bit of "relay steel" from other parts of the standard gauge system. These were presumably offers that the narrow gauge line could not refuse whether they were needed or not. Thus, according to Crittenden, in ascending order of sizes, the catalog of rail on the Sandy River in 1915 was as follows:

Weight (Lbs./yd.)	Miles	Material
25	1.7	iron (original)
30	0.16	iron
35	79.94	steel
50	3.24	steel
52	15.00	steel
56	3.26	steel
58¼	2.34	steel

Drawing 6. The details of a diamond crossing showing the bolts, and spacer blocks used on a prototype crossing plates.



Detail showing bolts, plates, and spacer blocks

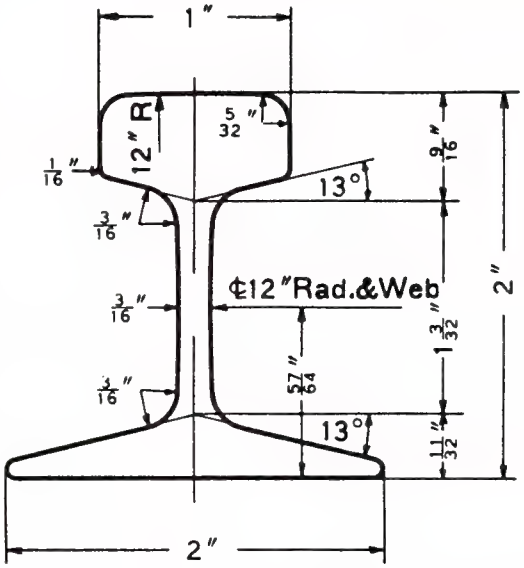
The very heavy steel was on the Farmington to Phillips stretch, plus some of the Sluice Hill part of the Rangeley line and perhaps some on the climb out of Strong on the Kingfield line. Note, however, that over three-fourths of the line was laid with 35-pound steel.

Rail size like curve radius has always been a trick question in scale model railroading. Rail Craft Products puts out a very informative fact sheet along with the list of their fine products. With their permission I have reproduced one table I find particularly interesting here:

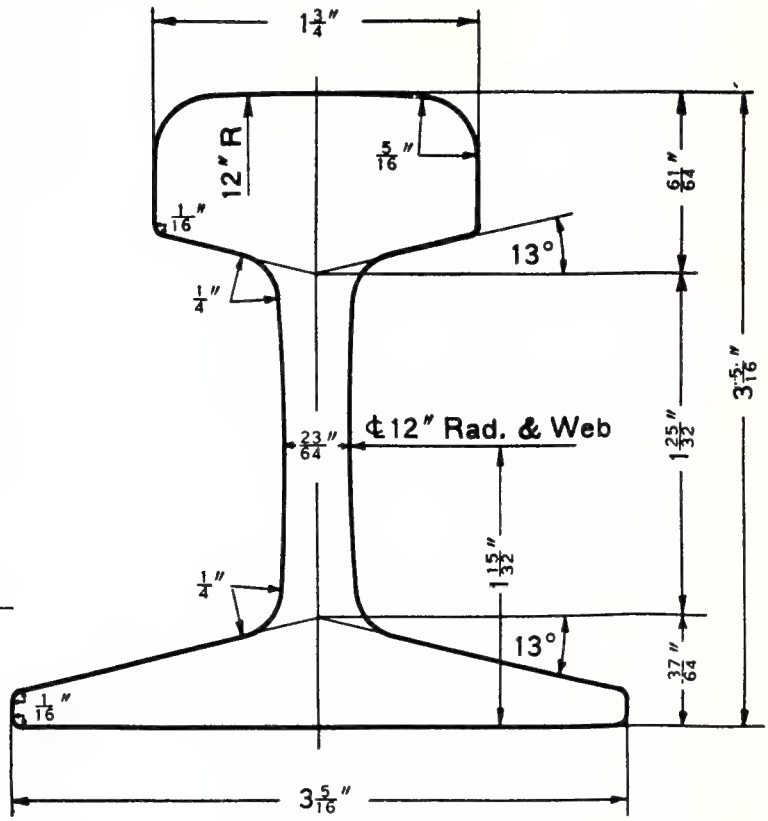
Weight in Pounds per Yard Represented by Various Size Rail

Scale	Code							
	40	**55**	**70**	**82**	**100**	**125**	**148**	**168**
O	12	25	35	55	85	100	132	*155*
S	20	40	65	85	110	*155*		
HO	40	75	100	132	*155*			
TT	75	115	*155*					
N	115	*155*						

12-POUND A.S.C.E. RAIL

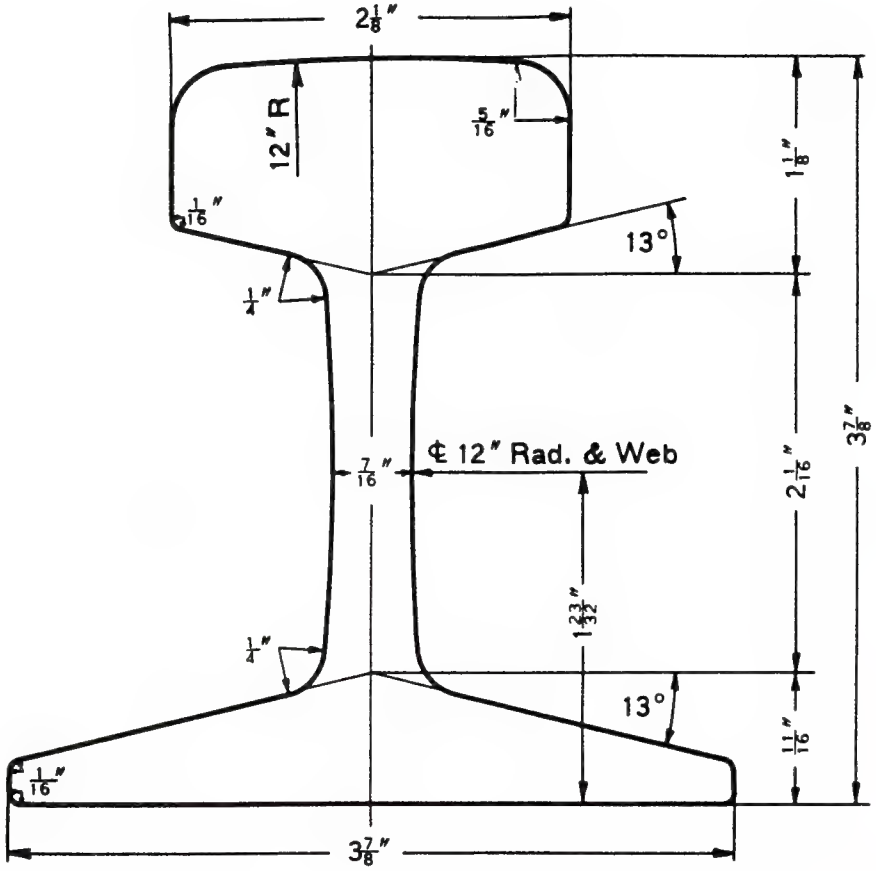


35-POUND A.S.C.E. RAIL



Rail cross sections courtesy of Bob Rands of Rail Craft.

50-POUND A.S.C.E. RAIL



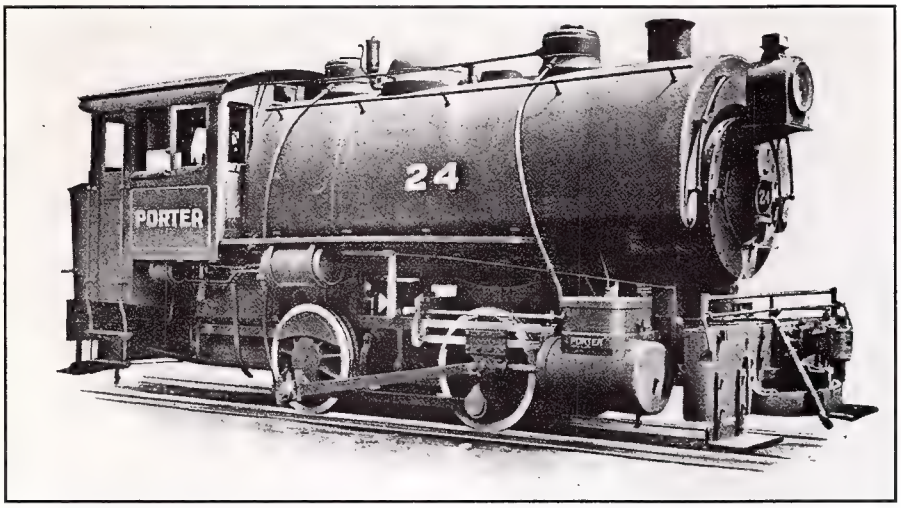
Opposite: Porter Class C-T, light six-wheel connected locomotive with tender. This neat little 3-foot gauge 0-6-0, designed for a Central American banana pike, weighed just 14½ tons (less tender), had 30-inch drivers and a 7-foot, 3-inch wheelbase. She could curve around a 55-foot radius on track laid with 25-pound rail.

Opposite: PULSOS, A Porter Class B-SS, light plantation and industrial four-wheel connected locomotive with side tanks. The Porter Catalog list PULPIT at a mere 4-tons but illustrates PULSOS whose 5½ tons call for 16-pound rail. Her extra 6-inches of wheelbase needs a 15-foot radius curve but she has the same 18-inch drivers as PULPIT. Note how her cylinders are inclined to avoid obstructions. In O scale these drivers would be the size of HO car wheels. This is it – they didn't come any smaller unless you want to model park, estate, or garden railways.

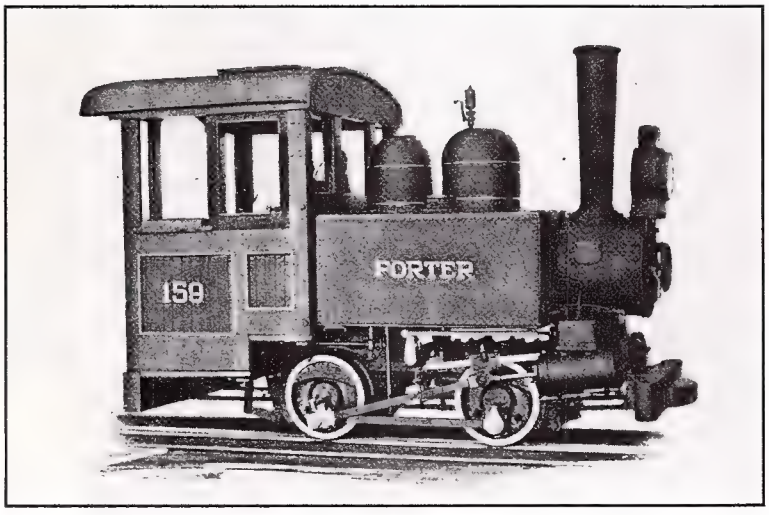
This is exactly as given by Rail Craft except where I've emphasized 155-pound-per-yard rail. I did this because as each new smaller scale started out it tended to use the largest prototype rail possible. However, the fellows in the larger scales were able to make use of the smaller scale's larger rail which means that nowadays the ¼-inch scale narrow gauger can get rail as small as 12 pounds per yard.

The early pioneer modelbuilders like Mel Thornburgh and E.P. Alexander modeled early-day locomotives in O scale using rail similar to code 125 in their track. Obviously the wide tires on the drivers showed up much more on such small locomotives than on big ones where the big boiler covered the tops of the wheels. O scale did not otherwise preclude building quite exact scale models. The case was different, however, when modelers delved into narrow gauge. Under the squat and compact locomotives of the 2-foot and 3-foot gauge roads there was simply no space to house O scale margins. To have tried to use them would have caused distortions from plan that no O scale modeler would accept – fitting the "model" to the wheels produces a toy not a model. What happened was that modelers fitted the rail to the model.

Quarter-inch scale now has "bottomed-out" with a scale 12-pound rail. Can you abide one more table? Here is how the Porter Company catalogued the minimum rail requirments for some of their locomotives, going by axle load maximum (with a few examples of my own):

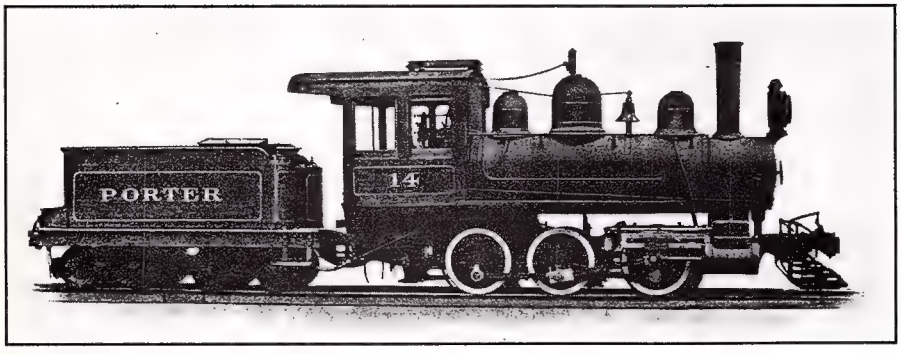


Porter Class B-S, Heavy four-wheel connected saddle-tank locomotive, KLOKKA. The Porter Catalog states that 60-tons is about the weight limit for a 4-wheeler. *Collection of Dick Andrews.*



Rail Requirements for Locomotives

Wt.of Rail in Lbs. per Yard	Greatest Axle Load in Tons	Locomotives
12	2	4-ton 0-4-0T PULPIT
25	5½	SANDY RIVER #1
35	9	EUSTIS #7, 8, 9 (SR&RL #20 21-22)
40	11	30-ton 4-4-0 (1870)
55	16½	D&RGW #470
65	20	MoPac 4-6-2(1902)
75	24	Santa Fe 2-10-2 (1905)
90	31	B&O 0-4-0T
100	36	UP 4-8-8-4 (1941)



Note that PULPIT was Porter's smallest locomotive. In O scale it is just about the size of a Lindsay B&O "Dockside" as made for TT (also offered in HOn3). The Eustis locomotives (later SR&RL #20-21-22) were actually a ton overweight according to this table but nevertheless they were run on 35-pound rail. The classic 30-ton 4-4-0 of 1870 would probably have run on 55-pound rail. Boston, Revere Beach & Lynn's 2-4-4T Fairlie #24 (3-foot gauge) also would have run on 55-pound rail. The real eye-opener about this table, however, is that the "little" B&O "Dockside" 0-4-0T shows up to be almost the heaviest locomotive on the hoof of the whole bunch.

Dick

GAZETTE GALLERY

Edited by Gene Deimling

This locomotive appears to be a Class A Climax but it was actually built by the Huntington Machine Company of Huntington, West Virginia. It appears to be on display somewhere. *Photo, collection of Bart Kister.*

Mark Linhard built this little On30 ten-wheeler from a Grandt Line Porter kit using a mechansim from a Mantua HO locomotive. He built the passenger cars from scribed wood and S scale roof stock. The models were photographed on Rick Richardson's layout in Australia. *Photo by Mark Linhart.*

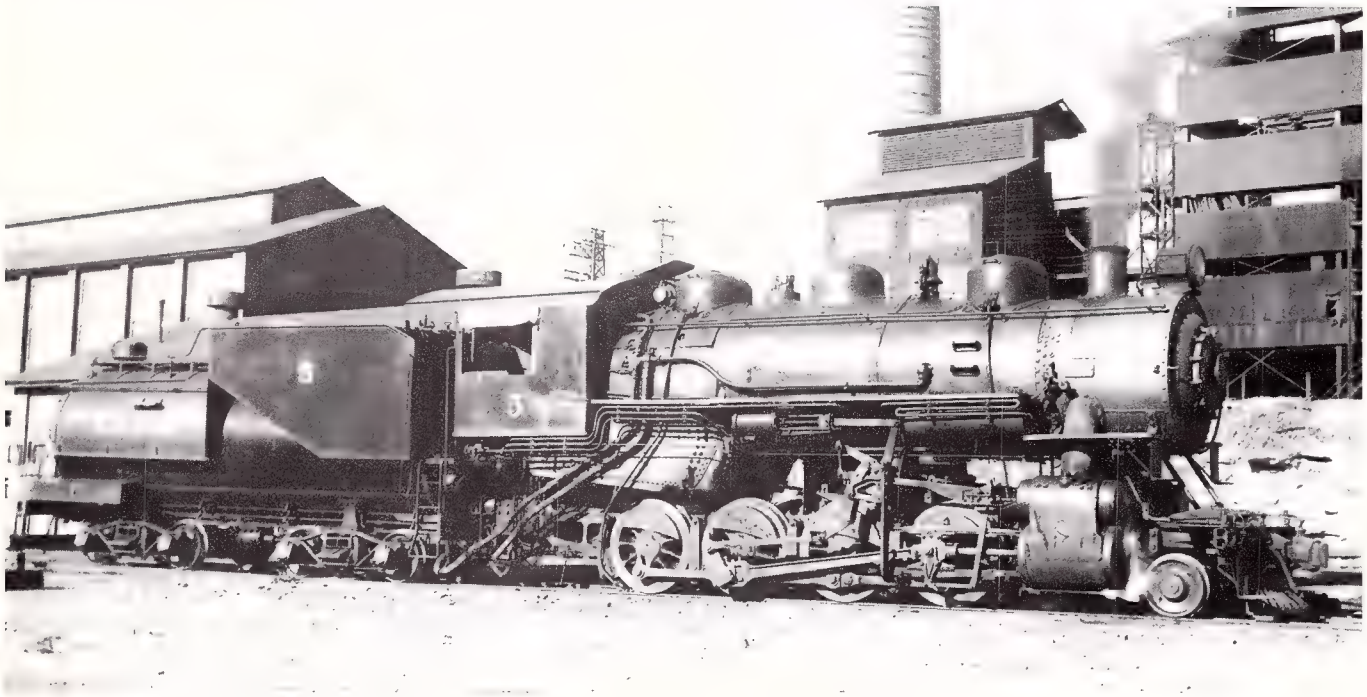
These two photos, taken near Babcock, West Virginia, show the Mann's Creek Railroad. The locomotive is Shay #8. *Photos by David J. Williams, III.*

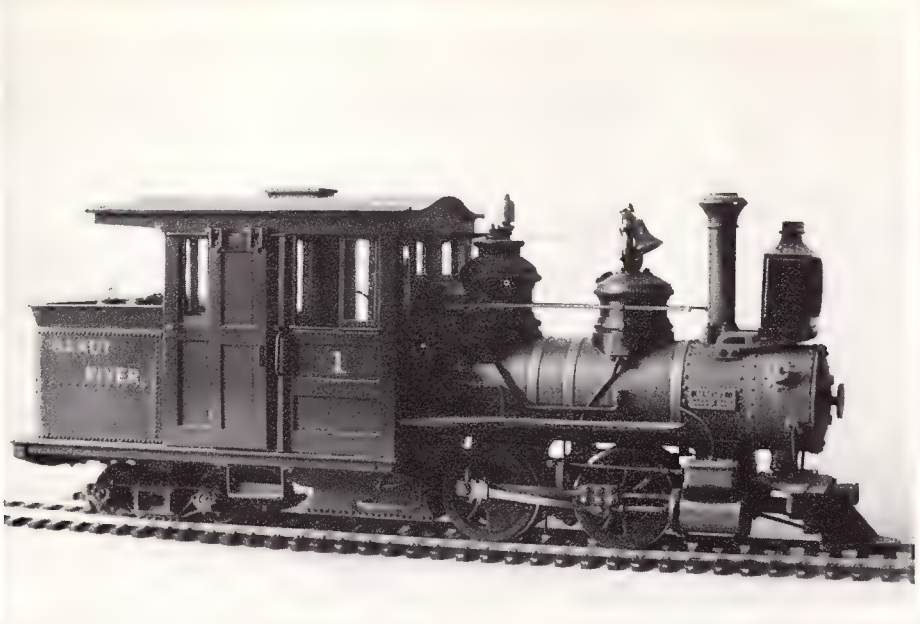
This unusual four-wheeled caboose was owned by the Chihuahua Mineral Railway of Chihuahua City, Mexico. This 3-foot gauge line was steam-powered. *Photo by Jim Hickey.*

The Kinzua Pine Mills Company of Kinzua, Oregon, was still running steam when this photo was taken by John G. Graham in 1960. The large three-truck Heisler is pulling its train towards the log dump. *Photo, collection of Ted Wurm.*

These photos were taken at the 1939 World's Fair on Treasure Island in San Francisco Bay. Mendocino County, California, provided the model of a lumber schooner taking on a load of lumber. The chute and landing were patterned after one located at Noyo (Fort Bragg), California. *Photos by Ted Wurm.*

The copper-hauling Magma Arizona Railroad was an interesting industrial line. This locomotive was turned out by Brooks in 1922 and has the "low-drivered look" of a Southern Pacific engine. The photo was taken in 1946 in Magma, Arizona. *Photo, collection of Ted Wurm.*





This classic little 2-foot gauge Forney was one of several scratch-built by Joe Murphy in ½-inch scale. It runs as good as it looks. *Photo by Joe Murphy.*

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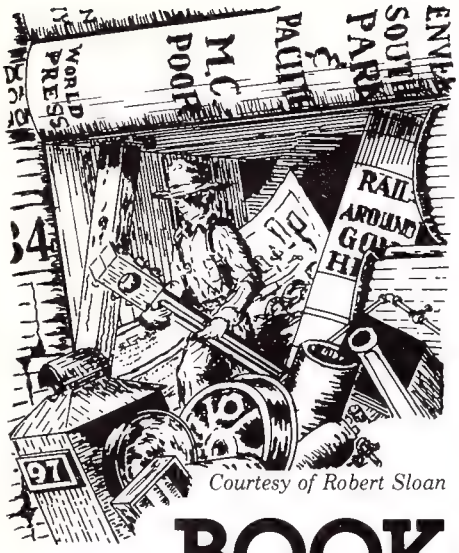


Courtesy of Robert Sloan

BOOK REVIEWS

Along the East Broad Top, by Donald J. Heimburger, Heimburger House Publishing Co., 310 Lathrop, Ave., River Forest, IL 60305, 1987. Hardbound, illus., 248 pages, $39.95 plus $2.25 postage, autographed copies $2.00 extra.

East Broad Top fans will revel in this new book that is more of a description of the EBT and its equipment than a detailed history. The emphasis is on the people who ran the line, the route it traveled, and the equipment that ran on the railroad. The first four chapters deal with the railroad in general. Chapters 5 through 10 describe the places on the railroad: Orbisonia, Mt. Union, Robertsdale, Coles and Three Springs, Shirleysburg, Shade Gap, and Saltillo. The tunnels are covered in chapter 11, followed by chapters on the locomotives, motor cars, passenger and freight cars, structures and shops. The final chapters discuss the EBT today and its maintenance. The book has over 350 black and white photos and an eight-page four color section. The model builder will appreciate the 16 fine plans of structures and rolling stock including the Orbisonia depot and roundhouse. There are no locomotive or motor car plans, but there is a plan for the lowly little four-wheeled coal cars used in the mines. There are also plans for the flatcars, boxcars, hopper cars, and cabooses we have come to love on this "modern" narrow gauge railroad. The cover jacket painting is by artist Jim Finnell, whose work often appears on the January/February **GAZETTE** covers. I found this book filled with wonderful photos of equipment that is begging to be modeled. Good reading by an author who knows his railroad. *Bob Brown.*

The White Pass: Gateway to the Klondike, by Roy Minter, The University of Alaska Press/McClelland & Stewart, Signers Hall, Fairbanks, Alaska 99775, 1987. Hardcover, illus., 400 pages, $24.95 plus $2.00 postage.

This new book on the White Pass is not primarily a railroad book. It is a 6-inch by 9-inch by 400 page detailed history of the White Pass area of the north, the Klondike Gold Rush, the people who "moiled" for gold, and the railroad that helped get the people in and the gold out. It answers any questions you might have about who built the White Pass and Yukon Railway and why.

This well-written book is full of interesting stories of the people who lived and struggled in the rugged north and reads remarkably well for a scholarly work complete with bibliography, list of sources, and index. There are seven maps spaced through out the text but no plans. The 80 black and white photos are clumped into three sections and include pictures of the people, diggings, towns, and railroad.

The author was a vice-president of the White Pass and Yukon Corporation until he retired in 1974. He organized the Klondike Gold Rush Jubilee and the 1962 Dawson City Gold Rush Festival – he has also made four films about the area including *Brave New North* and *Take Four Giant Steps.* He is clearly well-steeped in the history of the area and his expertise shows in the fascinating way he has told its story in this most enjoyable book. *Bob Brown.*

Speed Power, Production, and Profit: Railroad Logging in Northeastern Siskiyou County, 1900-1956, by Laurence H. Shoup with Suzanne Baker, (the Siskiyou Pioneer and Year Book Volume 5 Number 10.) Siskiyou County Historical Society, 1987, 910 South Main St., Yreka, California 96097. Softcover, illus., 144 pages, $7.00.

This little book is about the Weed Lumber Company and its standard gauge logging railroad. Weed is located in northern California, near the Oregon border, and had an extensive logging railroad until 1956. The book is divided into three parts – the authors discuss the beginnings of the company from 1900 to 1916, the mature period from 1916 to 1929, and the final years from 1929 to 1956. The book is detailed in its discussion of the people who worked in the lumber industry and the various towns that supported these people. The photos are printed in a sepia tone and show the people and machines used by the Weed Lumber Company and other companies in the area. There are no plans or maps but there is a complete bibliography. The last section of the book describes the activities of the Society over the last year. *Bob Brown.*

VIDEO REVIEWS

The Ghost Train of Old Ely, Madam Woo Video, 2257 East 3205 South, Salt Lake City, UT 84109. Sixty minutes, narration, background music, hi-fi, stereo. $39.95.

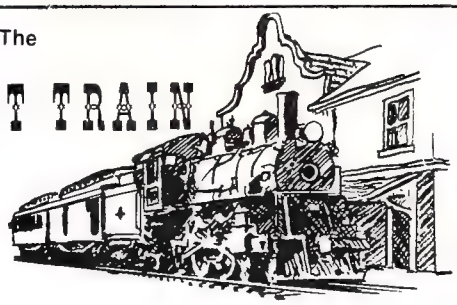
A new tape from Madame Woo Video – now what could *that* be about? Boy, was I disappointed when I found out it was about trains – no, not really – just kidding. Actually this is an excellent video about the standard gauge Nevada Northern that ran trains in and around Ely, Nevada. It tells the story of how rail superintendent Pete Peterson had just finished refurbishing old #40, a 1910 Baldwin 4-6-0, when he was told by management to scrap the engine and its train. That was back in the 1930s. Instead, Pete parked the whole train in a shed and never mentioned it again. In the 1960s some railfan groups found the train and ran it. But in 1978 the company decided once and for all to shut the Nevada Northern down – in 1983 the management ordered the train scrapped. By then a group of local citizens had decided that they wanted to run the train, so they set up the Nevada Northern Railroad Museum. You'll see the train, hear the tale of Pete Petersen's refusal to scrap it, and get in on the first run of old #40 at the new museum in 1987. I enjoyed the narration and background music and the series of run-bys and photos taken from the train as it proceeds from Ely up to the mining area around Ruth, Nevada. There are many wonderful shots of the train running through canyons and past old mines. The color is excellent and there are many shots of the yards, stations, and equipment – 60 minutes of steam that will delight anyone who loves steam engines. *Bob Brown.*

Colorado's Narrow Gauge Railroads, Finley Holiday Film Corporation, 12607 E. Philadelphia St., P.O. Box 619, Whittier, CA 90601. Fifty-five minutes, black and white and color, background music and narration. $29.95.

This wonderful new video is designed to be an introduction to the Colorado narrow gauge railroads and is an excellent history of the area. The tape intermixes historic still photos with shots of the remaining operating railroads. After an introduction to Colorado narrow gauge by Bob Richardson of the Colorado Railroad Museum and several great shots

of #346 and Gooses 6 and 2 in operation at the Museum, the tape shows how the D&RG built its line from Denver to Pueblo, Colorado, and then over to Chama. New Mexico. The Cumbres & Toltec Scenic Railroad is what is left of this line. An actor plays the part of W. H. Loveland to describe the Clear Creek line. W.H. built the original Colorado Central and tells you about the line as old photos and shots of the Georgetown Loop Railroad portray its route. A special highlight is a short film taken many years ago of a train crossing the Devil's Viaduct with all the passengers waving to the camera. The discussion of Cripple Creek and its railroads is conducted by an actress playing the beautiful Jennie LaRue, the local town madam. Ever a good businesswoman, she mentions that 58 trains a day that once arrived in Cripple Creek. Alas, all that remains today is the little 2-foot gauge tourist line. The rest of the tape shows the Cumbres & Toltec, Durango & Silverton, the Georgetown Loop, with Shays 8 and 12, and has a short description of Otto Mears' Rio Grande Southern complete with color film of the RGS in operation. There are shots of a Goose, cattle loading, and passenger and freight trains running on the RGS. This is an excellent tape for the novice or experienced narrow gauge fan. *Bob Brown.*

The
GHOST TRAIN
of old Ely



See the legendary Nevada Northern as it makes its inaugural runs as a scenic railroad in the summer of 1987. The consist includes No. 40, a beautiful Baldwin ten wheeler, built in 1910 for the Nevada Northern, No. 20, a baggage-express combine, built in 1907 and No. 5, built by the Pullman Car Co., originally named 'Silesia'. The story of how the 'Ghost Train' got its name is one of the most interesting tales in railroad history. You will also see the roundhouse and shop, the station, the offices, and the dispatcher's office dating from 1907.

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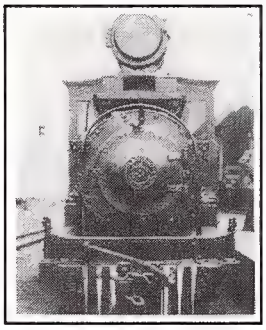

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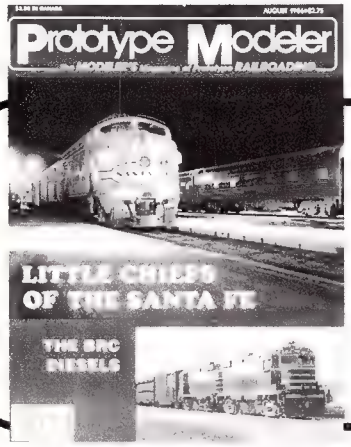

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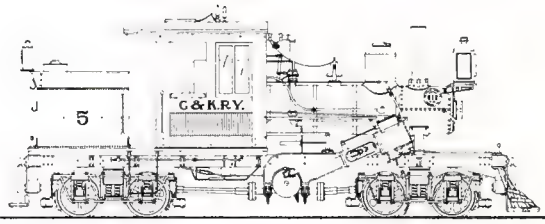

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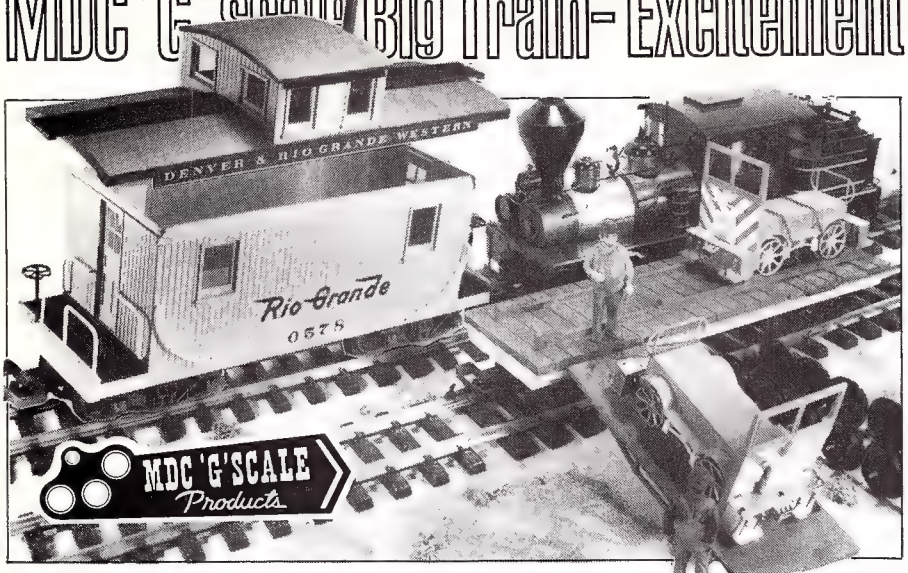

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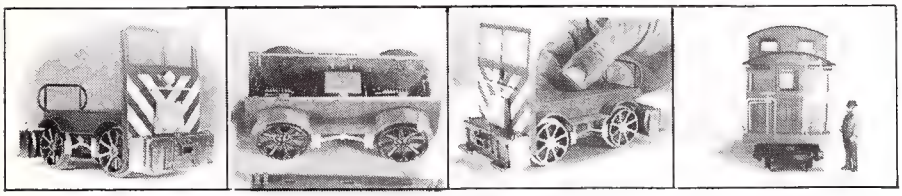

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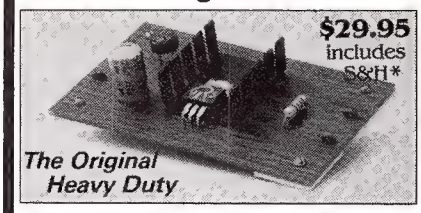

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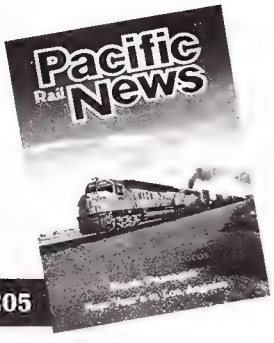

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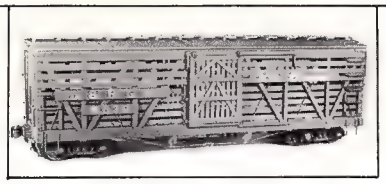

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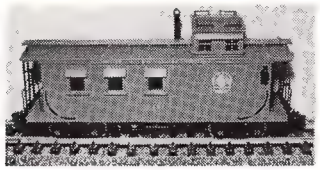

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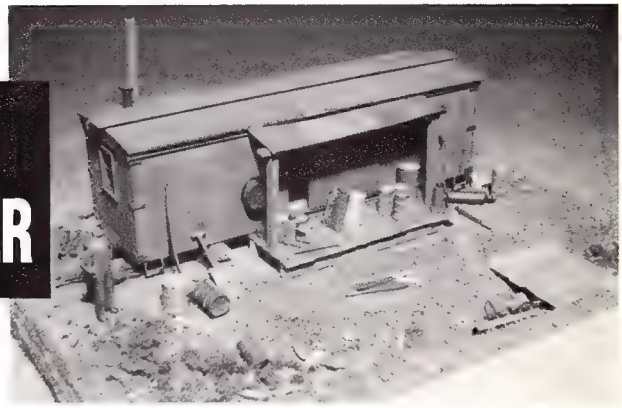

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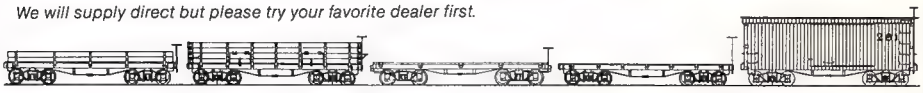

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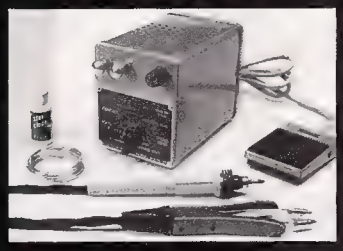

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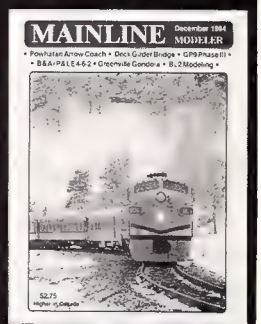

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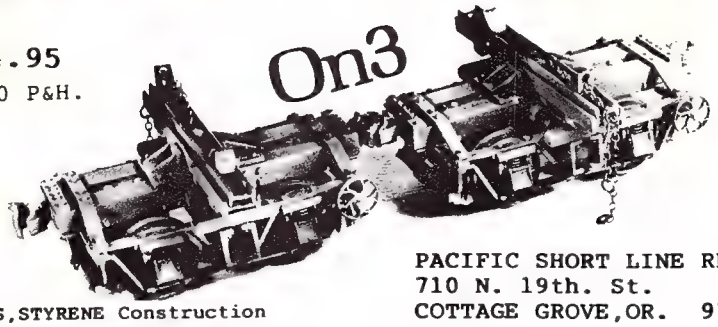

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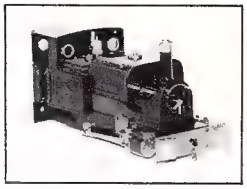

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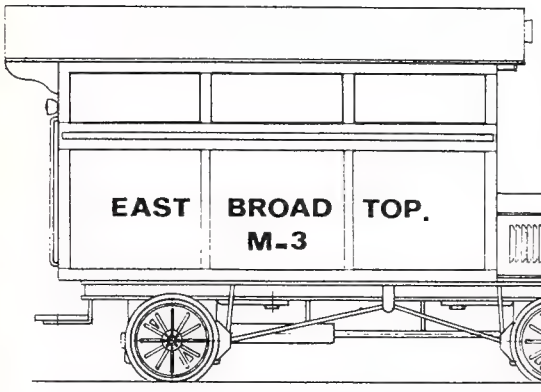

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WANTED: On2 Sandy River Car Shops rolling stock kits, complete, unassembled, cheap. Peter Tuttle, 33 Stockholm Ave., Rockport, MA 01966.

Sn3 FOR SALE: Brass, kits, parts. All mint. SSAE for list. Jack McGarry, P.O. Box E, Middletown, RI 02840. 401/789-3420.

On3 FOR SALE: IHM K-27 #461, $1595; PFM K-27 last run, $1095; SS C-16 #223, $725; SS RGS #22, $695; SS RGS #20, $625. SSAE for list of brass, kits, parts, etc. All mint. Jack McGarry, P.O. Box E, Middletown, RI 02840. 401/789-3420.

On3 FOR SALE: PFM Mason 2-6-6T, 1 of 34 made - offers or interesting trades; Overland D&RGW C-18 #318, $665; Balboa C-21, used, no tender, $295. John Hutnick, 1132 Clinton Terrace, So. Plainfield, NJ 07080. 201/753-1968.

KADEE TRACK SPIKER Code 70 and 100 heads. Extra spikes. New. $115. Timothy Travers, 12305 Exbury Street, Herndon, VA 22070. 703/444-1515.

O/On3 FOR SALE: Precision Scale Hammond Lumber 2-6-6-2T, new, $775. Westside D&RGW On3 short caboose, $100. Chooch gas station kit $125. Durango Press Marion Steam Shovel kits, $140 ea. Precision Scale Westside Lumber caboose #1 w/trucks $60. Precision Scale On3 side dump ore car kits (PSK 9026) $22 ea. or 5 for $99. CHB caterpillar tractor kits, $55 ea. CHB logging arch, $25. Timothy Travers, 12305 Exbury Street, Herndon, VA 22070. 703/444-1515.

FOR SALE: On2 Brass SR&RL 0-4-4Ts, combine, many freight cars, kits and parts. SSAE for list. Richard Turner, P.O. Box 640, Goochland, VA 23063.

FOR SALE: Yorke Rubbles Station kit, Fine Scale kits, P.F.M. shays, Austin C.P. Huntington 4-2-4 factory painted. Wanted: all Richard Prince books and Southern Steam Power by Ranks and Lowe. T. English, 2132 Lakeview Circle, Matthews, NC 28105.

WANTED: FSM Kit #205 W. F. Brambell Co. Call with price after 6 e.s.t. 404/993-4616. Robert C. Scobie, 780 Rounsaville Road, Roswell, GA 30076.

WANTED: CHB Machinery Series. Don Winter On3 High Hercules Disconnects and other Don Winter kits and interior items. York Pool Hall and Bordello. Chooch Feed and Grain Store and Gas Station. PSC and Back Shop Shay engine assembly two cylinder crankcase and On3 Shay trucks, what have you. PSC On3 13-ton and 16-ton shay basketcase. Renwal 25 Ford T 29 Ford, 32 Ford, and others. Cannon scale models Dolbeer donkey engine. Chooch interior details. Pre 1950 mags Timberman, West Coast Lumberman and others. Original sawmill machinery catalogs. Old Wurlitzer jukeboxes. Craig Haines, 39144 Charbeneau, Mt. Clemens, MI 48043. 313/468-1707.

PSC HOn3 K-28, unbuilt kit, brass, $300, best offer. Frisch, 25420 Sherwood, Huntington Woods, MI 48070. 313/544-4277.

FOR SALE: HO PFM Flywheel two Tk. wood rack Shay $325.00 MEW Barnhart loader pwd. $125.00 PFM 0-6-0 st cast w/e Kemtron loggers detail pk $85.00 Kemtron Thomas flyer railcar w/Lindsay motor $75.00. Wanted: Ken Kidder Single Tk. open bench "O" trolley, Berkshire St. Ry. steeple cab, K.W.R. 0-4-0 diesel kit or blt. Craig La Vallee. 313/543-9371.

Sn3 Scratchbuilt freight cars. Most styrene, some wood $50 - $70 range. No kits available for most of what I build. Trade for Sn3 brass? SSAE. Paul Hecht, 500 Falcon Cir., Monona, WI 53716.

FOR SALE: Sn3, Overland C&S #9, $350.00, Caboose no's, 73, 1002, and 1006, $85.00 each. PBL C-18 #316, $475.00. PFM #7 Goose, $150.00. Tim Lloyd, 1-312/895-6477.

Sn3 PBL K-27 No. 453 unpainted test run only $720.00. Free UPS shipping. 312/286-2144.

WANTED: Need desperately information on interior layout of Westside Mill at Tuolumne Machinery location. Belt, drives, boilers, chip and dust conveyors. Jim McAnally, 425 Winding Brook Lane, Richardson, TX 75081. 214/699-1818.

SURPLUS HOn3: PSC K-28 kit, part. assembled, $175.00; Kemtron C-16 modern kit, $75.00; other parts and kits with SSAE. B.A. Coburn 4804 Shadyway Dr., Arlington, TX 76018. 817/465-4558, evenings.

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Sn3 BRASS by PBL, SS, Hot Tip Soldering Set, books, misc. - send for list. Some HO, On3. 3904 Stanton St., Colorado Springs, CO 80907.

WANTED: NG&SLG Sept-Oct 1975, Nov-Dec 1975, Mar-Apr 1976 and Jul-Aug 1977. Have: SGN Spring 1972, Fall 1972, Spring 1974, Summer 1974, Fall 1974, Winter 1974. Will buy, sell or exchange. Mestel, 12874 County Road 314, Buena Vista, Colorado 81211-9708. 719/395-8076.

FSM kit 185, Feed Mill, with all castings, $100 postpaid, can use credit card. Ted Prichard, 989 S. Main, Heber, UT 84032. 801/654-4264.

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Sn3 WANTED: PBL K-36 K-37, WSLCo. Shays #7 #14 #15 C-16 #271. Jack Vansworth, 24452 Cielo, Laguna Niguel, CA 92677. 714/495-8012.

On3 WANTED: PSC WSLCo. Shays (all), WSLCo Rolling Stock, cabooses, kits or built up. Jack Vansworth, 24452 Cielo Laguna Niguel, CA 92677.

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SS Ltd. HO building kits for sale, K106 tool house $25.00, K107 Pillar Crane $15.00, K109 Flue Rack & Cart $15.00 K-130 V&T Jib Crane $15.00. William Crain, 958 E. Galatea, Azusa, CA 91702.

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Sn3 TRADE: Have mint Overland RGS #74. Will trade for mint Overland C&S #60. Larry Jensen, Box 427, Burbank CA 91503.

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WANTED: Precision Scale On3 Porter cylinder block #036 and drivers #030 or #031. Louis Burns, 810 N.W. Front Ave., #F-9, Portland, OR 97209.

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FOR SALE: Sn3 Mich-Cal #5 (oil) mint $445. Wanted: PBL WSL Co. #7, 12 buy trade. Ross Leavens, 7322 Mary Ave., N.W., Seattle, WA 98117. 206/782-5609, message.

O SCALE, standard gauge for sale: Iron Horse models wagon top Climax, TRO $600. Westside No. 12 3-T Shay, painted $625. Overland Models AH&D Ditcher TRO $425. Durango Press Marion kit $150. portable Dynatrol. Complete with 3 receivers $250. Precision LeeTown Climax truck kits, many extra parts $60. A few other kits and stuff. SSAE for list. Jim Brown, 1402 E. Horizon Dr., Mukilteo, WA 98275. 206/355-0344, after 6 p.m.

WANTED: P.F.M. On3 #50 Diesel, all replies answered. J. Burgess. 33 Cowan St. Gawler 5118, South Australia, Australia.

SELL: ON3 PSC 16 ton T-boiler shay, NOB $635.00. Overland C&S #5 painted-lettered with plow, $595.00. Walkaround throttle for new PFM SS-11. $79.95. Gary Saty, E. 7607 Beverly Dr., Spokane, WA 99212. 509/924-6919.

SELL/TRADE: HO building kits, vehicles, detail parts and misc., want O/On3 logging or Colorado NG items. Also want HO FSM kits. SSAE for list. Gary Saty, E. 7607 Beverly Dr., Spokane, WA 99212. 509/924-6919.

WANTED: "O" PSC SP 70-C-1, 60-R-1, T28, T31 or other Vanderbilt and rectangular tenders, slope and whale back tenders welcome. H. Danewitz, Hoerster, Str. 13, D-4800 Bielefeld, West Germany.

FOR SALE OR TRADE: IHM On3 Mich. Ca. #2, mint and never run. Rear truck needs work. $500. Want "O" brass steam locos. Semi kits welcome. Please offer only never run models. H. Danewitz, Hoerster, Str. 13, D-4800 Bielefeld, West Germany.

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NEARING COMPLETION of 8 year research into D&RGW 5500 Stock Cars and have plans to publish results by Durango 1989. Have already acquired photographs of 220 cars and have exhausted all known sources but need help to find information about the outstanding cars listed below. If you have pictures of any of these cars please contact me and I will forward a simple questionnaire, to be returned if possible before November 1988. Will answer all letters and refund any expenses requested. 5505, 06,07, 10, 12, 15, 18, 20, 26, 27, 28, 29, 32, 34, 37, 41, 42, 44, 46, 48, 50, 52, 56, 58, 63, 68, 69, 71, 76, 77, 81, 83, 85, 86, 90, 93, 98, 99. 5602, 12, 15, 17, 28, 30, 32, 34, 35, 36, 40, 41, 42, 46, 47, 49, 54, 56, 59, 60,61, 64, 65, 73, 75, 81, 82, 83, 85, 88, 99. 5704, 07,08, 11, 12, 20, 24, 29, 30, 32, 34, 35, 36, 46, 48, 52, 59, 61, 62, 66, 68, 72, 75, 76, 79, 80, 81, 85, 86, 87, 97, 99. 5800, 06,09,10, 12, 13, 14, 18, 28, 29, 33, 37, 38, 40, 43, 44, 48, 49. Also need D&RGW lettering drawings. Please help by airmailing Vic Stone, 23 Sinah Lane, Hayling Island, Hampshire, England.

On3 SALE: Trains of Texas tribute combine $169; Beaver Creek-Westside #2 tank - mint $179. Richard Banach, 98 Main St., Succasunna, NJ 07876. 201/584-5181.

HOn30 SALE: Flying Zoo - Mich-Cal Shay #2 $129 - 18 ton Climax $129 - both mint TRO. Richard Banach, 98 Main St., Succasunna, NJ 07876. 201/584-5181.

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FOR SALE: Gazettes, Mainline Modeler, Finelines, Slim Gauge News, Modelmaker, and other model and prototype back issues and out-of-print books. LSSAE for list. Vallette, Box 447-R, Bethayres, PA 19006.

OR&W: Writing a history of the Ohio River & Western narrow gauge (ex-Bellaire, Zanesville & Cincinnati). Need information, photos. All costs paid. Ed Cass, 21262 Byron Road, Shaker Heights, OH 44122.

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WANTED: HOn3 business cars, Rico, Edna, also Alamosa. Serious buyer for ptd and lettered rolling stock and D&RGW engines. Bruce Kinkner, P.O. Box 9987, Phoenix, AZ 85068. 602/943-6315.

WANTED: On3 P.S.C. Westside Lbr. Shay #7. Earl Failla, P.O. Box 1179, Colfax, CA 95713. 916/346-2963.

FOR SALE: On3 Sunset N.C.N.G.R.R. #8, only 35 imported, TRO, $700.00. E. F. Failla, P.O. Box 1179, Colfax, CA 95713.

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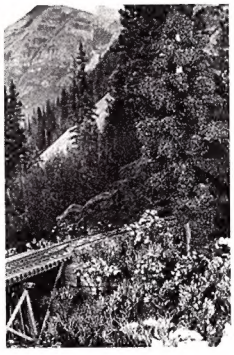

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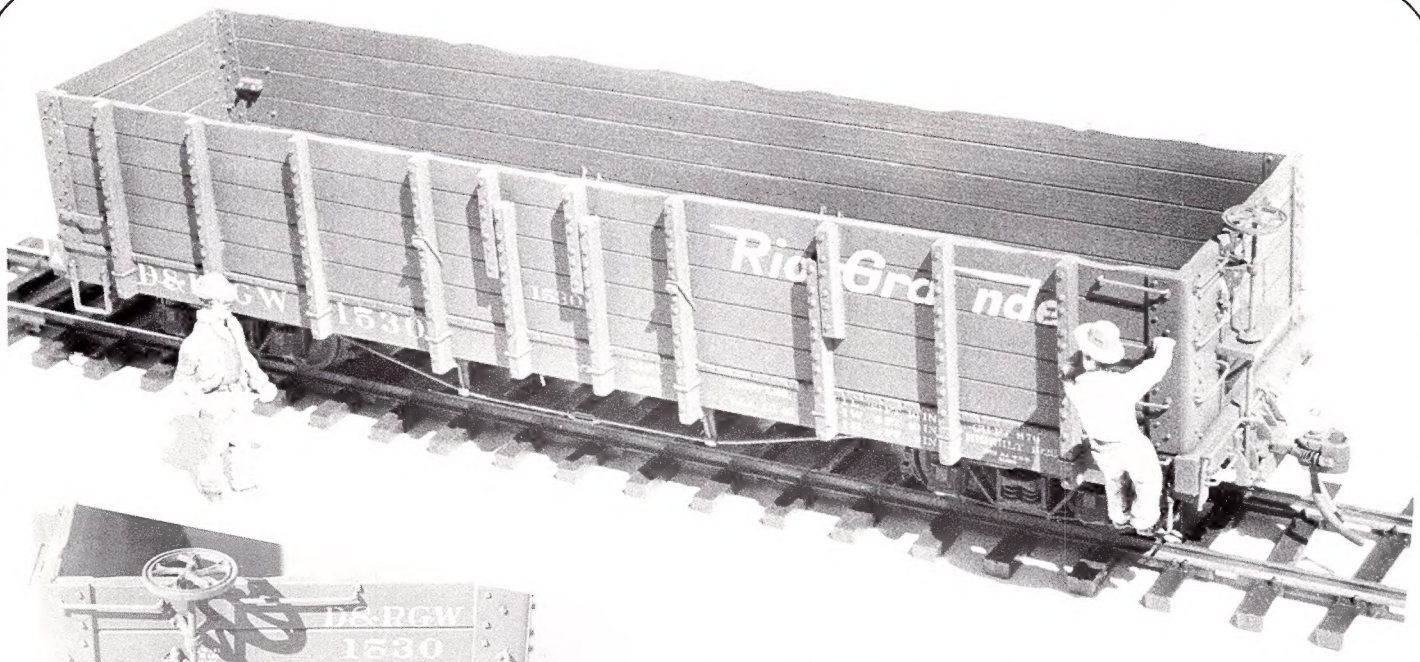

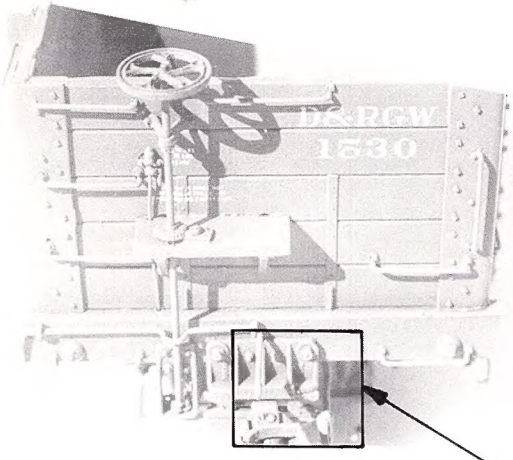

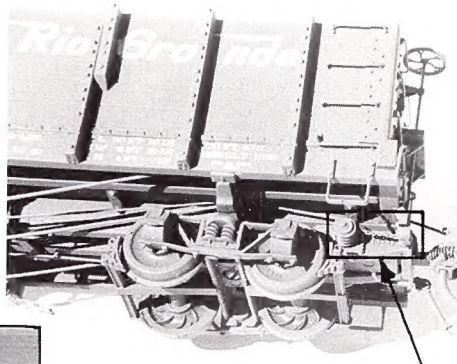

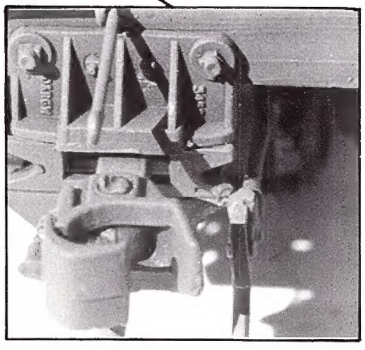

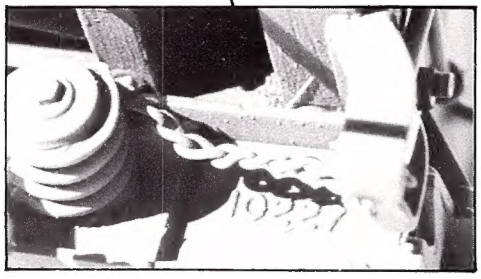

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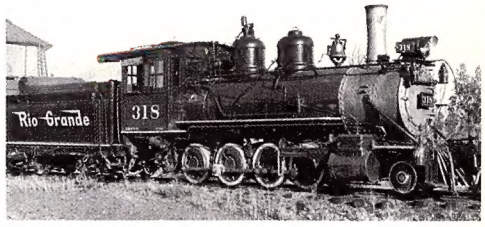

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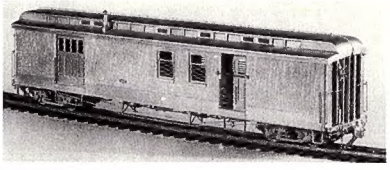

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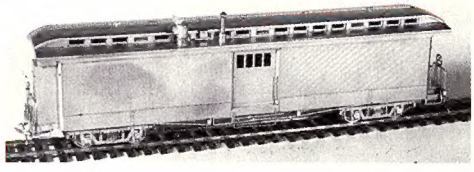

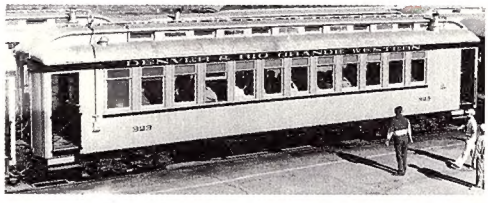

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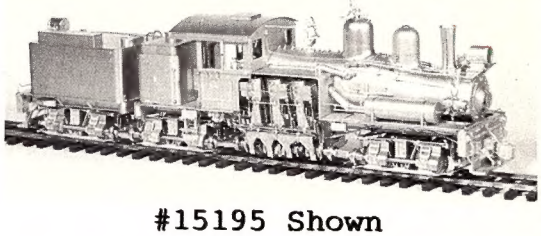

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